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## Forest Service

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Bulletin NC-84



# **Timber Resource of Wisconsin's Central Survey Unit, 1983**

Jerold T. Hahn



Information contained in this report includes the most commonly used Forest Inventory and Analysis statistics. However, additional forest resource data can be provided to interested users. Persons requesting additional information that can be provided from the raw inventory data are expected to pay for the retrieval costs. These costs will vary depending on the complexity of the request, from less than \$100 for a relatively simple request to \$2,000 for a complex retrieval involving the services of a Forest Inventory and Analysis computer programmer. If requests for data conflict with ongoing Forest Inventory and Analysis work, they will be scheduled so as to minimize the impact on the work unit.

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## **FOREWORD**

Forest Inventory and Analysis (FIA) is a continuing endeavor as mandated by the Renewable Forest and Rangeland Resources Planning Act of 1974. Prior inventories were mandated by the McSweeney-McNary Forest Research Act of 1928. The objective of FIA is to periodically inventory the Nation's forest land to determine its extent, condition, and volume of timber, growth, and depletions. Up-to-date resource information is essential to frame intelligent forest policies and programs. USDA Forest Service regional experiment stations are responsible for conducting these inventories and publishing summary reports for individual States. The North Central Forest Experiment Station is responsible for forest resource evaluation in Illinois, Indiana, Iowa, Kansas, Michigan, Minnesota, Missouri, Nebraska, North Dakota, eastern South Dakota, and Wisconsin.

Fieldwork for the Wisconsin Statewide forest inventory was begun in the summer of 1981 and completed in late 1983. Reports on the three previous inventories of Wisconsin's timber resource are dated 1936, 1956, and 1968.

More accurate survey information was obtained during the 1983 survey than otherwise would have been feasible because of intensified field sampling. Such sampling was made possible by additional funding and field personnel provided the North Central Station by the Wisconsin State Legislature through the Department of Natural Resources. Data from the Departments' canvass of all primary wood-using plants in the State was used to help estimate the quantity of timber products harvested in Wisconsin.

Aerial photos used in the Central Unit Forest Inventory were furnished by the Wisconsin Department of Natural Resources and the USDA Agricultural Stabilization and Conservation Service.

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# **TIMBER RESOURCE OF WISCONSIN'S CENTRAL SURVEY UNIT, 1983**

**Jerold T. Hahn, *Principal Mensurationist***

## **HIGHLIGHTS**

### **Forest Area**

- Forest land accounted for 3.0 million acres (42 percent of the Unit's land area) in 1983, this constitutes a 5.1 percent increase since 1968.
- Commercial forest land occupied 2.95 million acres in 1983--an increase of 4.2 percent from the 2.83 million acres in 1968.
- Productive-reserved forest land totaled 30,100 acres in 1983, compared to 3,900 acres in 1968. Major additions since 1968 include an increase in the number and area of State and county parks (14,200 acres in 1983), scientific and natural areas, military reservation impact areas, and Christmas tree plantations (11,000 acres).
- Jackson County contained the largest area of commercial forest in 1983 (371,400 acres); in 1968 it had 345,500 acres.
- Farmers and miscellaneous private owners continued to hold 74 percent of the commercial forest (2.1 million acres in 1968 and 2.2 million acres in 1983). A new definition of farm ownership shifted much of what was previously in the farmer category to the miscellaneous private category.
- County and municipal agencies owned 399,300 acres of commercial forest in 1983 (14 percent).
- The oak-hickory forest type continued to dominate the commercial forest land base in 1983, comprising 32 percent (937,600 acres) of the commercial forest area.
- The maple-birch type increased 30 percent to 506,200 acres while the aspen type decreased 16 percent to 577,500 acres.
- Sapling and seedling stands occupied 30 percent of the commercial forest in 1983, compared to 38 percent in 1968.
- Sawtimber stands, which increased by 330,700 acres between surveys, amounted to 30 percent of the commercial forest in 1983, compared to 19 percent in 1968.

- Sixty-four percent (114,900 acres) of the commercial plantation area is in the red pine type. This is 85 percent of the total area (135,000 acres) in red pine.
- Sixty-five percent (116,800 acres) of the plantations are less than 30 years old.
- Ten percent of all commercial forest area has white pine as prominent conifer in the understory, and 8 percent has jack pine as prominent conifer in the understory.
- Less than 2 percent of all forest land is unproductive or reserved.
- The average site index for commercial forest land in the Unit is 64 feet at age 50.

## **Timber Volume**

- The volume of growing stock in 1983 was 2.87 billion cubic feet, 75 percent greater than the 1.64 billion in 1968.
- Sawtimber volume amounted to 6.3 billion board feet in 1983, 94 percent greater than the 1968 volume (3.2 billion board feet).
- The 2.2 billion cubic feet of hardwoods make up 75 percent of the growing-stock volume.
- Red pine growing-stock volume increased 609 percent since 1968. Ingrowth of plantations to merchantable size was the dominant factor in this dramatic increase. Area of red pine sawtimber increased from 7,500 acres to 20,900 acres, and red pine poletimber increased from 20,100 acres to 77,100 acres.
- The oaks (814 million cubic feet), aspens (505 million), and pines (595 million) contain the highest volumes, and together account for nearly 67 percent of the growing-stock volume.
- Average growing-stock volume per acre in 1983 was 972 cubic feet, compared to 580 cubic feet in 1968.
- Forty-five percent of the growing-stock volume is in stands from 31- to 60-years old.
- More than half of the sawtimber volume is in trees with grade 3 butt logs. Tree diameter is generally the limiting criterion.

- The volume in cull trees (rough, rotten, and short-log cull) is 528 million cubic feet; salvable dead tree volume is 45 million cubic feet.

## Stand Conditions

- Net annual growth on growing-stock trees was 100 million cubic feet in 1982.
- The net annual growth rate of growing stock was 3.5 percent of inventory in 1982.
- Net growth averaged 33.9 cubic feet per acre in 1982.
- Annual mortality of growing stock amounted to 24.2 million cubic feet (0.8 percent of inventory) in 1982.
- Disease accounted for 23 percent of the mortality in 1982, chiefly diseases of aspen and elm.
- Elm mortality resulted in a 57 percent decline in elm volume between inventories, chiefly due to the effects of Dutch elm disease.

## Timber Use

- Timber removals from growing stock in 1982 totaled over 48 million cubic feet (1.7 percent of inventory),

compared to 42 million cubic feet (2.6 percent of inventory) in 1967.

- The pines made up 26 percent of the 1982 removals volume, although they account for only 21 percent of the growing-stock volume.
- Output of roundwood products from growing stock totaled 43.3 million cubic feet in 1981; 47 percent was pulpwood, 14 percent was fuelwood, and 37 percent was saw logs.
- Wood residue from primary plants totaled 8.6 million cubic feet in 1981, 97 percent of which was used.

## Biomass

- Highest yields of live tree biomass are in the northern white cedar (82 green tons per acre), the white pine (82 tons), and the red pine (78 tons) forest types.
- Live tree biomass (trees greater than 1 inch d.b.h.) totaled 193 million green tons (65 tons per acre) in 1983, with just under half in the boles of growing-stock trees.

## APPENDIX

### ACCURACY OF SURVEY

Forest inventory and Analysis information is based on a sampling procedure designed to provide reliable statistics at the State and Unit levels. Consequently, the reported figures are estimates only. A measure of reliability of these figures is given by sampling errors. These sampling errors mean that the chances are two out of three that if a 100-percent inventory had been taken, using the same methods, the results would have been within the limits indicated.

For example, the estimated growing-stock volume in the Central Unit in 1983, 2,868.9 million cubic feet, has a sampling error of  $\pm$  2.72 percent ( $\pm$  78.0 million cubic feet). The growing-stock volume from a 100-percent inventory would be expected to fall between 2,946.9 and 2,790.9 million cubic feet ( $2,868.9 \pm 78.0$ ), there being a one in three chance that this is not the case.

The following tabulation shows the sampling errors for the 1983 Central Unit Forest Inventory:

Item	Unit totals	Sampling error
Growing stock	(Million cubic feet)	(Percent)
Volume	2,868.9	2.72
Growth	100.2	3.73
Removals	48.2	26.52
Sawtimber	(Million board feet <sup>1</sup> )	
Volume	6,295.7	3.92
Growth	267.7	4.86
Removals	148.4	27.36
Commercial forest land	(Thousand acres)	
	2,950.9	0.35

As survey data are broken down into sections smaller than Survey Unit totals, the sampling error increases. For example, the sampling error for growing-stock volume in a particular county is higher than that for total growing-stock volume in the Unit (table 66 shows the sampling errors for estimates smaller than Unit totals).

<sup>1</sup>International  $\frac{1}{4}$ -inch rule.

## SURVEY PROCEDURES

We used a two-phase sampling design for the 1983 Wisconsin survey. This sampling scheme and associated estimators are similar to sampling with partial replacement (SPR) in that a set of randomly located plots was available for remeasurement and a set of new randomly located plots was established and measured. Major enhancements in the new Wisconsin design were stratification for disturbance on the old sample and use of a growth model to improve regression estimates made on the old undisturbed forest plots. The growth model used was the Stand and Tree Evaluation and Modeling System (STEMS).<sup>2</sup>

The major steps in the new survey design were as follows:

1. The first phase of the survey was to interpret aerial photos. In this phase two sets of random points were located on current aerial photographs. The first was a set of new photo points and the second was a set of relocated old photo points (ground plot locations from the previous inventory). A total of 41,492 1-acre points, including old ground sample locations, was systematically distributed across aerial photos of the entire Unit. These points were classified into land classes as shown below to make a preliminary estimate of forest area. Next, 19,278 of these points were stereoclassified as to stand-size class and density. Finally, 3,195 points were examined on the ground to correct the preliminary area estimate for errors in classification and for actual changes in land use since the photos were taken.

Land class	Photo points classified	Photo points stereoclassified	Inventory plots checked
Forest land	18,363	18,363	1,372
Unproductive/ reserved forest land	134	134	16
Nonforest land			
with trees	781	781	48
without trees	21,535	0	1,704
Water	679	0	55
Total	41,492	19,278	3,195

2. The second phase of the survey was to sample ground plots. The plot selection and measurement procedures of phase two of the new Wisconsin survey design are outlined in figure 1.

From the new photo points, a random sample of ground plots was established and land use, volume, mortality, and cutting were recorded. At each forest ground plot location, variable-radius plots (basal area factor 37.5) were established at 10 points uniformly placed over the sample acre. These locations were monumented for future remeasurement.

On the old inventory photo points (old plot locations), we used a somewhat different procedure. Old plots were either remeasurable (monumented) or non-removable (not monumented and thus difficult to relocate). Within both of these groups, old plots were additionally identified as undisturbed or disturbed. The remeasurable old inventory photo points classified as forest undisturbed were remeasured on the ground to obtain current land use, volume, growth, and removals data. Additionally, all forest undisturbed remeasurable plots were projected to the current time using STEMS to provide estimates of current volume and growth. The comparison of projected and observed values on these plots provided regression estimators to adjust the projected values of the undisturbed non-removable plots. All disturbed remeasurable plots were remeasured on the ground to assess changes since the last inventory.

Disturbance as used here refers to any change on a plot that can be detected on aerial photos and that the STEMS growth processor cannot predict, such as catastrophic mortality, cutting, seedling stands, and land use change.

The nonremovable forest points are those that were not monumented during the 1968 inventory but

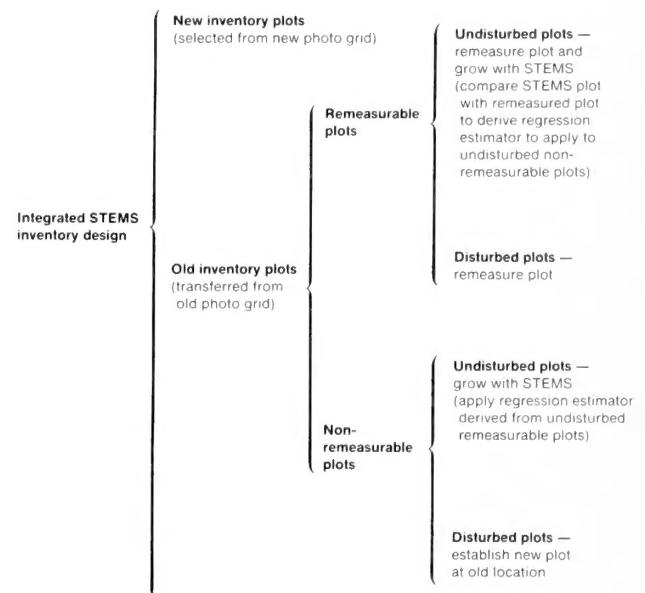


Figure 1.--Logic structure for the 1983 Wisconsin sample design.

<sup>2</sup>For more information on STEMS, see: Belcher, D. L.; Holdaway, M.R.; Brand, G.J. A description of STEMS: The stand and tree evaluation and modeling system. Gen. Tech. Rep. NC-79. St. Paul, MN: U.S. Department of Agriculture, Forest Service, North Central Forest Experiment Station; 1981. 18 p.

played a crucial role in the new survey design. The nonremovable undisturbed forest points were visited on the ground at the time of the last survey and following careful examination of both past and current photographs it was determined that nothing happened that STEMS was unable to simulate. STEMS was then used to update the old plot and tree data to produce an estimate of current data. Thus these points became ground plots even though the information was obtained without actually visiting the plot. The plot record for each updated plot was sent to the field for verification of current ownership information. For points classified as disturbed, a new ground plot was established as close to the old location as possible. This allowed information about land use trends to be recorded even though the old plot could not be exactly relocated for remeasurement.

The estimation procedure for computing statistics from this sampling design was more complicated than the simple two-phase estimation procedure used in the past. In fact, this procedure yielded two independent samples, one coming from the new photo points and the other coming from the old photo points that were remeasured or projected. A more detailed description of the sampling design is available in a separate publication.<sup>3</sup>

3. Statistics on timber utilization during 1981 were obtained from mill surveys. The Wisconsin Department of Natural Resources canvassed resident sawmills, veneer mills, and other primary wood-using plants. The North Central Forest Experiment Station canvassed out-of-State sawmills, pulpmills, and veneer mills to determine their use of Wisconsin timber. Fuelwood and fencepost output was based on a sample of public and private landowners to determine their production of fuelwood and fenceposts. Estimates of primary mill residue used for fuelwood were obtained from the canvass of Wisconsin primary wood-using plants.

4. A total of 2,568 felled trees on 133 active logging operations was measured throughout the State during 1981-1982 to develop wood utilization factors for converting timber products output to timber removals for saw logs and pulpwood. Factors for all other products were obtained during the 1966-1967 Wisconsin utilization study.

5. Field data were sent to St. Paul, Minnesota, to be processed and analyzed.

<sup>3</sup>Hahn, J. T.; Hansen, M. H.; Fairweather, S. E. A Sampling procedure incorporating a growth simulator. U.S. Department of Agriculture, Forest Service, North Central Forest Experiment Station. St. Paul, MN 55108.1984 (Manuscript in process).

## COMPARING WISCONSIN'S FOURTH INVENTORY WITH THE THIRD INVENTORY

Data from new forest inventories are often compared with data from earlier inventories to determine trends in forest resources. However, changes in procedures and definitions between surveys often make it necessary to adjust earlier survey data so that they are comparable to data from the new survey. A consistency check will be made for each Forest Unit in Wisconsin to ensure that the changes observed between inventories reflect actual changes in the resource and not changes in definitions or procedures.

### Identifying and Correcting Procedural Changes

Between the 1968 and 1983 inventories of Central Wisconsin, some procedural changes were made in the method of deriving annual mortality estimates and determining forest type; revised volume equations were used.

Mortality figures for the 1968 inventory were based on field estimates from nonremeasurement plots. Information gathered on remeasurement plots during the current inventory was used to adjust the 1968 mortality figures. This adjustment also changed the estimate of net growth for the 1968 inventory. Additionally, the old spruce-fir forest type was separated into two distinct types for the new industry--white spruce and balsam fir. Comparisons with old data may be made by adding the two new types together.

The difference in volume equations resulted in a 6-percent increase in reported growing-stock volume for 1968.

### Checking for Consistency

A test was made to ensure that it was possible to move from the adjusted 1968 resource statistics to the 1983 values by means of Timber Resource Analysis System (TRAS), a USDA Forest Service computer program for updating, backdating, and projecting timber volume, growth, mortality, and removals. Using the adjusted 1968 numbers of softwood and hardwood trees by 2-inch diameter class and applying 1983 cubic feet per tree estimates, volumes were generated for the 1968 inventory that are comparable with 1983 volumes. Then, using growth rates, mortality rates, and removals rates for the period between the two surveys, TRAS projected the inventory from 1968 to 1983. The program prints out volumes by diameter class for softwoods and hardwoods for selected years in the period.

Thus, inconsistencies in volume, growth, mortality, and removals were identified and resolved.

TRAS generates an estimate of what total removals had to be for the inventory to have changed as it did between surveys, given the volume, growth, and mortality data. Estimates of removals for products and for logging residues, two of the three components of total timber removals, were available from an independent utilization study. An estimate of "other" removals (see Definition of Terms in Appendix), the third component of total removals, was made by subtracting the first two removals components from the TRAS-generated total removals estimate. This estimate of "other" removals was compared with findings from remeasurement plots and new plots (stump counts and land use change) to check its validity. When necessary, TRAS was rerun and adjusted until other removals were compatible with the estimate from field data. Total removals were "trend level removals" because the estimate of "other" removals was based on a removals trend line from 1968 to 1983.

## LOG GRADE

In Wisconsin's Central Unit the butt log of every sawtimber tree on every full permanent sample plot was graded for quality.

Butt logs were graded on the basis of external characteristics as indicators of quality. Hardwood species were graded according to "Hardwood Log Grades for Standard Lumber."<sup>4</sup> The best 12-foot section of the lowest 16-foot hardwood log, or the best 12-foot upper section if the butt log did not meet minimum log-grade standards, was graded as follows:

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<sup>4</sup>Vaughn, C. L.; Wollin, C. A.; McDonald, K. A.; Bulgrin, E. H. *Hardwood log grades for standard lumber. Res. Pap. FPL 63. Madison, WI: U.S. Department of Agriculture, Forest Service, Forest Products Laboratory; 1966. 52 p.*

# Forest Service standard grades for hardwood factory saw logs

Grading factors	Specifications							
	Log grade 1			Log grade 2			Log grade 3	
Position in tree	Butts only	Butts and uppers	Butts and uppers			Butts and uppers		
Scaling diameter, inches	13-15	16-19	20+	11+	12+	12+	8+	8+
Length without trim, feet	10+		10+	8-9	10-11	12+	8+	8+
	Min. length, feet	7	5	3	3	3	3	2
Required clear cuttings <sup>3</sup> of each of three best faces <sup>4</sup>	Max. number	2	2	2	2	2	3	No Limit
	Min. proportion of log length required in clear cutting	5/6	5/6	5/6	2/3	3/4	2/3	1/2
Maximum sweep and crook allowance	For logs with less than one-fourth of end in sound defects	15 percent			30 percent		50 percent	
	For logs with more than one-fourth of end in sound defects	10 percent			20 percent		35 percent	
Maximum scaling deduction	40 percent <sup>5</sup>			50 percent <sup>6</sup>			50 percent	

<sup>1</sup>Ash and basswood butts can be 12 inches if they otherwise meet requirements for small #1's.

<sup>2</sup>Ten-inch logs of all species can be #2 if they otherwise meet requirements for small #1's.

<sup>3</sup>A clear cutting is a portion of a face, extending the width of the face, that is free of defects.

<sup>4</sup>A face is one-fourth of the surface of the log as divided lengthwise.

<sup>5</sup>Otherwise #1 logs with 41-60 percent deductions can be #2.

<sup>6</sup>Otherwise #2 logs with 51-60 percent deductions can be #3.

# Forest Service standard specifications for hardwood construction logs (tie and timber logs)<sup>1</sup>

Position in tree	Butt and upper	
Min. diameter, small end	8 inches +	
Min. length, without trim	8 feet	
Clear cuttings	No requirements.	
Sweep allowance, absolute	One-fourth of the diameter at the small end for each 8 feet of length.	
	Single knots	Any number, if no one knot has an average diameter above the callus in excess of one-third of the log diameter at point of occurrence.
Sound surface defects	Whorled knots	Any number if sum of knot diameters above the callus does not exceed one-third of the log diameter at point of occurrence.
	Holes	Any number provided none has a diameter over one-third of the log diameter at point of occurrence, and none extends more than 3 inches into included timber. <sup>2</sup>
Unsound surface defects		Same requirements as for sound defects if they extend into included timber. <sup>2</sup> No limit if they do not.
	Sound	No requirements.
End defects	Unsound	None allowed; log must be sound internally, but will admit one shake not to exceed one-fourth the scaling diameter and will admit a longitudinal split not extending more than 5 inches into the contained timber.

<sup>1</sup>These specifications are minimum for the class. If, from a group of logs, factory logs are selected first, thus leaving only nonfactory logs from which to select construction logs, then the quality range of the construction logs so selected is limited, and the class may be considered a grade. If selection for construction logs is given first priority, it may be necessary to subdivide the class into grades.

<sup>2</sup>Included timber is always square, and dimension is judged from small end.

Softwood species were graded according to the following specifications on the following page.

## Log Grades for Eastern White Pine

Log grade	Minimum size Diameter	Length <sup>1</sup>	Sweep or crook allowance	Total cull allowance including sweep	Maximum weevil injury	Allowable knot size (inches) <sup>2</sup> on three best faces or minimum clearness of four faces
1	Inches 12 & 13	Feet 8-16	-----Percent-----		Number 0	Inches Four faces clear full length
			20	50		Two faces clear full length, or four faces clear 50 percent length (6 feet min. length) <sup>3</sup>
2	6 +	8-16	30	50	0	Sound knots i.e. <sup>4</sup> D/6 and less than 3 inches <sup>5</sup> Unsound knots: i.e. 1½ inches and for: butt, lots i.e. D/ 12 upper logs i.e. D/10 or four faces clear 50 percent of length
3	6 +	8-16	40	50	8-foot logs 1 weevil 10-foot + logs: 2 weevil	Sound knots i.e. D/3 and less than 5 inches. Unsound knots i.e. D/6 and less than 2½ inches.
4	6 +	8-16	50	50	No limit	No limit

<sup>1</sup>Plus trim.

<sup>2</sup>Disregard all knots less than ½-inch diameter in all grades.

<sup>3</sup>The sum of the diameter of sound knots plus twice the sum of the diameter of unsound knots (in inches) is less than or equal to ½ of the diameter of the log (inches).

<sup>4</sup>i.e. means less than or equal to.

<sup>5</sup>D means d.i.b. of log at location of knot.

## LOG GRADES FOR JACK PINE AND RED PINE

*Grade 1:* logs with three or four clear faces.<sup>6</sup>

*Grade 2:* logs with one or two clear faces.

*Grade 3:* logs with no clear faces.

After the tentative log grade is established, the log will be degraded one grade for each of the following, except that no log can be degraded below grade 3. Net scale after deduction for defect must be at least 50 percent of the gross contents of the log.

1. *Sweep.* Degrade any tentative 1 or 2 log one grade if sweep amounts to 3 or more inches and equals

<sup>6</sup>*A face is one-fourth of the circumference in width extending full length of the log. Clear faces are those free of: knots measuring more than ½-inch in diameter, overgrown knots of any size, holes more than ¼-inch in diameter. Faces may be rotated to obtain the maximum number of clear ones.*

or exceeds one-third the diameter inside bark at small end.

2. *Heart rot.* Degrade any tentative 1 or 2 log grade if conk, massed hyphae, or other evidence of advance heart rot is found anywhere in it.

## LOG GRADES FOR ALL OTHER SOFTWOOD LOGS

### Grade 1

1. Logs must be 16 inches in diameter or larger, 10 feet or longer, and with deduction for defect not over 30 percent of gross scale.
2. Logs must be at least 75 percent clear on each of three faces.
3. All knots outside clear cutting must be sound and not over 2-½ inches in size.

### Grade 2

1. Logs must be 12 inches in diameter or larger, 10 feet or longer, and with a net scale after deduction

for defect of at least 50 percent of the gross contents of the log.

- Logs must be at least 50 percent clear on each of three faces or 75 percent clear on two faces.

### Grade 3

- Logs must be 6 inches in diameter or larger, 8 feet or longer, and with a net scale after deduction for defect of at least 50 percent of the gross contents of the log.

Note: (A) Diameters are diameter inside bark (d.i.b.) at small end of log.

(B) Percent clear refers to percent clear in one continuous section.

## METRIC EQUIVALENTS OF UNITS USED IN THIS REPORT

1 acre = 4,046.86 square meters or 0.405 hectare.  
1,000 acres = 405 hectares.  
1 cubic foot = 0.0283 cubic meter.  
1 foot = 30.48 centimeters or 0.3048 meter.  
1 inch = 25.4 millimeters, 2.54 centimeters, or 0.0254 meter.  
1 pound = 0.454 kilogram.  
1 ton = 0.907 metric ton.

## TREE SPECIES GROUPS IN WISCONSIN<sup>6</sup>

### SOFTWOODS

Jack pine	<i>Pinus banksiana</i>
Red pine	<i>Pinus resinosa</i>
Eastern white pine	<i>Pinus strobus</i>
White spruce	<i>Picea glauca</i>
Black spruce	<i>Picea mariana</i>
Balsam fir	<i>Abies balsamea</i>
Eastern hemlock	<i>Tsuga canadensis</i>
Tamarack	<i>Larix laricina</i>
Northern white-cedar	<i>Thuja occidentalis</i>
Other softwoods	
Eastern redcedar	<i>Juniperus virginiana</i>
Norway spruce	<i>Picea abies</i>
Scotch pine	<i>Pinus sylvestris</i>

<sup>6</sup>The common and scientific names are based on: Little, Elbert L. Check list of native and naturalized trees of the United States. Agric. Handb. 541. Washington, DC: U.S. Department of Agriculture, Forest Service; 1979. 375 p.

### HARDWOODS

White oaks	
White oak	<i>Quercus alba</i>
Swamp white oak	<i>Quercus bicolor</i>
Bur oak	<i>Quercus macrocarpa</i>
Chinkapin Oak	<i>Quercus muehlenbergii</i>
Select red oak	
Northern red oak	<i>Quercus rubra</i>
Other red oaks	
Northern pin oak	<i>Quercus ellipsoidalis</i>
Black oak	<i>Quercus velutina</i>
Select hickory	
Shagbark hickory	<i>Carya ovata</i>
Other hickory	
Bitternut hickory	<i>Carya cordiformis</i>
Yellow birch	<i>Betula alleghaniensis</i>
Hard maple	
Sugar maple	<i>Acer saccharum</i>
Black maple	<i>Acer nigrum</i>
Soft maples	
Red maple	<i>Acer rubrum</i>
Silver maple	<i>Acer saccharinum</i>
Ashes	
White ash	<i>Fraxinus americana</i>
Black ash	<i>Fraxinus nigra</i>
Green ash	<i>Fraxinus pennsylvanica</i>
Balsam poplar	<i>Populus balsamifera</i>
Eastern cottonwood	<i>Populus deltoides</i>
Sycamore	<i>Platanus occidentalis</i>
Aspens	
Bigtooth aspen	<i>Populus grandidentata</i>
Quaking aspen	<i>Populus tremuloides</i>
American basswood	<i>Tilia americana</i>
Beech	<i>Fagus grandifolia</i>
Black walnut	<i>Juglans nigra</i>
Black cherry	<i>Prunus serotina</i>
Butternut	<i>Juglans cinerea</i>
Elms	
American elm	<i>Ulmus americana</i>
Slippery elm	<i>Ulmus rubra</i>
Rock elm	<i>Ulmus thomasii</i>
Hackberry	<i>Celtis occidentalis</i>
Paper birch	<i>Betula papyrifera</i>
Black willow	<i>Salix nigra</i>
Other hardwoods	
Boxelder	<i>Acer negundo</i>
Black locust	<i>Robinia pseudoacacia</i>
Honeylocust	<i>Gladitsia triacanthos</i>
River birch	<i>Betula nigra</i>
Red mulberry	<i>Morus rubra</i>
Blackgum	<i>Nyssa sylvatica</i>
Northern Catalpa	<i>Catalpa speciosa</i>
Noncommercial species	
Mountain maple	<i>Acer spicatum</i>
Eastern hophornbeam	<i>Ostrya virginiana</i>
Peachleaf willow	<i>Salix amygdaloides</i>

American hornbeam	<i>Carpinus caroliniana</i>
Hawthorn	<i>Crataegus</i> spp.
Striped maple	<i>Acer pensylvanicum</i>
Mountain ash	<i>Sorbus</i> spp.
Pin cherry	<i>Prunus pensylvanica</i>
Chokecherry	<i>Prunus virginiana</i>

## DEFINITION OF TERMS

**Basal area.**--The area is square feet of the cross section at breast height of a single tree. When the basal area of all trees in a stand are summed, the result is usually expressed as square feet of basal area per acre.

**Biomass.**--The above-ground volume of all live trees (including bark and foliage) reported in green tons. Biomass is made up of 5 components:

*Growing-stock bole.*--Biomass of a growing-stock tree from a 1-foot stump to a variable 4-inch top.

*Growing-stock tops and limbs.*--Biomass of a growing-stock tree from a 1-foot stump minus the growing-stock bole.

*Cull bole.*--Biomass of a cull tree from a 1-foot stump to a variable 4-inch top.

*Cull tops and limbs.*--Biomass of a cull tree from a 1-foot stump minus the cell bole.

*1- to 5-inch trees.*--Biomass of all live trees from 1- to 5-inches in diameter at breast height.

**Commercial forest land.**--Forest land producing or capable of producing crops of industrial wood and not withdrawn from timber utilization. (Note: Areas qualifying as commercial forest land are capable of producing more than 20 cubic feet per acre per year of annual growth when managed. Currently inaccessible and inoperable areas are included except when the areas involved are small and unlikely to become suitable for producing industrial wood in the foreseeable future.) Also see definition of pastured commercial forest land.

**Commercial species.**--Tree species presently or prospectively suitable for industrial wood products. (Note: Excludes species of typically small size, poor form, or inferior quality such as hophornbeam and hawthorn.)

**County and municipal land.**--Land owned by counties and local public agencies or municipalities, or land leased to these governmental units for 50 years or more.

**Cull.**--Portions of a tree that are unusable for industrial wood products because of rot, form, or other defect.

**Diameter classes.**--A classification of trees based on diameter outside bark, measured at breast height (4½ feet above the ground). (Note: D.b.h. is the common abbreviation for diameter at breast height. Two-inch diameter classes are commonly used in

Forest Survey, with the even inch the approximate midpoint for a class. For example, the 6-inch class includes trees 5.0 through 6.9 inches d.b.h.)

**Farm.**--Either a place operated as a unit of 10 or more acres from which the sale of agricultural products totals \$50 or more annually, or a place operated as a unit of less than 10 acres from which the sale of agricultural products for a year amounts to at least \$250. Places having less than the \$50 or \$250 minimum estimated sales in a given year are also counted as farms if they can normally be expected to produce goods in sufficient quantity to meet the requirements of the definition.

**Farmer-owned land.**--Land owned by farm operators. (Note: Excludes land leased by farm operators from nonfarm owners, such as railroad companies and States.)

**Forest land.**--Land at least 16.7 percent stocked by forest trees of any size, or formerly having had such tree cover, and not currently developed for nonforest use. (Note: Stocking is measured by comparing specified standards with basal area and/or number of trees, age or size, and spacing.) The minimum area for classification of forest land is 1 acre. Roadside, streamside, and shelterbelt strips of timber must have a crown width of at least 120 feet to qualify as forest land. Unimproved roads and trails, streams, or other bodies of water or clearings in forest areas shall be classed as forest if less than 120 feet wide. Also see definitions for land area, commercial forest land, noncommercial forest land, productive-reserved forest land, stocking, unproductive forest land, and water.

**Forest industry land.**--Land owned by companies or individuals operating primary wood-using plants.

**Forest trees.**--Woody plants having a well-developed stem and usually more than 12 feet tall at maturity.

**Forest type.**--A classification of forest land based on the species forming a plurality of live tree stocking. Major forest types in the State are:

*Jack pine.*--Forests in which jack pine comprises a plurality of the stocking. Common associates include eastern white pine, red pine, aspen, birch, and oak.)

*Red pine.*--Forests in which red pine comprises a plurality of the stocking. (Common associates include eastern white pine, jack pine, aspen, birch, and oak.)

*White pine.*--Forests in which eastern white pine comprises a plurality of the stocking. (Common associates include red pine, aspen, birch, and maple.)

*Balsam fir.*--Forests in which balsam fir and white spruce comprise a plurality of stocking with balsam fir the most common. (Common associates include white spruce, aspen, maple, birch, northern white-cedar, and spruce.)

**White spruce.**--Forests in which white spruce and balsam fir comprise a plurality of the stocking with white spruce the most common. (Common associates include balsam fir, aspen, maple, birch, and northern white-cedar.)

**Black spruce.**--Forests in which swamp conifers comprise a plurality of the stocking with black spruce the most common. (Common associates include tamarack, northern white-cedar, and balsam fir.)

**Northern white-cedar.**--Forests in which swamp conifers comprise a plurality of the stocking with northern white-cedar the most common. (Common associates include balsam fir, black ash, spruce, and black spruce.)

**Tamarack.**--Forests in which swamp conifers comprise a plurality of the stocking with tamarack the most common. (Common associates include black spruce, balsam fir, and aspen.)

**Oak-hickory.**--Forests in which northern red oak, white oak, bur oak, or hickories, singly or in combination, comprise a plurality of the stocking. (Common associates include jack pine, aspen, birch, and maple.)

**Elm-ash-soft maple.**--Forests in which lowland elm, ash, cottonwood, and red maple, singly or in combination, comprise a plurality of the stocking. (Common associates include aspen, birch, and balsam fir.)

**Maple-birch.**--Forests in which sugar maple, basswood, yellow birch, elm, and red maple, singly or in combination, comprise a plurality of the stocking. (Common associates include white pine, elm, hemlock, and basswood.)

**Aspen.**--Forests in which quaking aspen or big-tooth aspen, singly or in combination, comprise a plurality of the stocking. (Common associates include oak, pine, balsam fir, and paper birch.)

**Paper birch.**--Forests in which paper birch comprises a plurality of the stocking. (Common associates include maple, aspen, and balsam fir.)

**Exotic.**--Forests in which species not native to the State comprise a plurality of the stocking. (Mostly Scotch pine plantations.)

**Gross area.**--The entire area of land and water as determined by the Bureau of the Census, 1970.

**Growing-stock trees.**--Live trees of commercial species. Excluding rough and rotten dead trees.

**Growing-stock volume.**--Net volume in cubic feet of growing-stock trees 5 inches d.b.h. and over, from a 1-foot stump to a minimum 4 inch top diameter outside bark of the central stem or to the point where the central stem breaks into limbs. Cubic feet can be converted to standard cords by dividing by 79. One standard cord is 128 cubic feet of stacked wood, including bark and air.

**Hardwoods.**--Dicotyledonous trees, usually broad-leaved and deciduous.

**Idle farmland.**--Includes former cropland, orchards, improved pastures, and farm sites not tended within the past 2 years and presently less than 16.7 percent stocked with trees.

**Improved pasture.**--Land currently improved for grazing by cultivating, seeding, irrigating, or clearing of trees or brush and less than 16.7 percent stocked with live trees.

**Indian land.**--All lands held in trust by the United States for individual Indians or tribes, or all lands, titles to which are held by individual Indians or tribes, subject to Federal restrictions against alienation.

**Land area.**--A. *Bureau of the Census.* The area of dry land and land temporarily or partly covered by water such as marshes, swamps, and river flood plains (omitting tidal flats below mean high tide); streams, sloughs, estuaries, and canals less than one-eighth of a statute mile wide; and lakes, reservoirs, and ponds less than 40 acres in area.

B. *Forest Inventory and Analysis.* The same as the Bureau of the Census, except minimum width of streams, etc., is 120 feet and minimum size of lakes, etc., is 1 acre.

**Live trees.**--Growing-stock, rough, and rotten trees 1 inch d.b.h. and larger.

**Log grades.**--A classification of logs based on external characteristics as indicators of quality or value. (See Appendix for specific grading factors used.)

**Logging residues.**--The unused growing stock portions of trees cut or killed by logging.

**Maintained road.**--Any road, hard-topped or other surfaces, that is plowed or graded at least once a year. Includes rights-of-way that are cut or treated to limit herbaceous growth.

**Marsh.**--Nonforest land that characteristically supports low, generally herbaceous or shrubby vegetation and that is intermittently covered with water.

**Merchantable.**--Refers to a pulpwood or saw log section that meets pulpwood or saw log specifications, respectively.

**Miscellaneous federal land.**--Federal land other than National Forest, land administered by the Bureau of Land Management, and Indian land.

**Miscellaneous private land.**--Privately owned land other than forest-industry and farmer-owned land.

**Mortality.**--The volume of sound wood in growing-stock and sawtimber trees that die annually.

**National Forest land.**--Federal land that has been legally designated as National Forest or purchase units, and other land administered by the USDA Forest Service.

**Net annual growth of growing stock.**--The annual change in volume of sound wood in live sawtimber

and poletimber trees and the total volume of trees entering these classes through ingrowth, less volume losses resulting from natural causes.

**Net annual growth of sawtimber.**--The annual change in the volume of live sawtimber trees and the total volume of trees reaching sawtimber size, less volume losses resulting from natural causes.

**Net volume.**--Gross volume less deductions for rot, sweep, or other defect affecting use for timber products.

**Noncommercial forest land.**--(a) Unproductive forest land and (b) productive-reserved forest land.

**Noncommercial species.**--Tree species of typically small size, poor form, or inferior quality that normally do not develop into trees suitable for industrial wood products.

**Nonforest land.**--Land that has never supported forests, and land formerly forested where use for timber management is precluded by development for other uses. (Note: Includes areas used for crops, improved pasture, residential areas, city parks, improved roads of any width and adjoining clearings, power-line clearings of any width, and 1- to 40-acre areas of water classified by the Bureau of the Census as land. If intermingled in forest areas, unimproved roads and nonforest strips must be more than 120 feet wide and more than 1 acre in area to qualify as nonforest land.)

a. *Nonforest land without trees.*--Nonforest land with no live trees present.

b. *Nonforest land with trees.*--Nonforest land with one or more trees per acre at least 5 inches d.b.h.

**Nonstocked land.**--Commercial forest land less than 16.7 percent stocked with growing-stock trees.

**Other removals.**--Growing-stock trees removed but not utilized for products, or trees left standing but "removed" from the commercial forest land classification by land use change. Examples are removals from cultural operations such as timber stand improvement work, land clearing, and changes in land use.

**Ownership.**--Property owned by one owner, regardless of the number of parcels in a specified area.

**Ownership size class.**--The amount of commercial forest land owned by one owner, regardless of the number of parcels.

**Owner tenure.**--The length of time a property has been held by the owner.

**Physiographic class.**--A measure of soil and water conditions that affect tree growth on a site. The physiographic classes are:

*Xeric sites.*--Very dry soils where excessive drainage limits growth and species occurrence. Example: sandy jack pine plains.

*Xeromesic sites.*--Moderately dry soils where excessive drainage limits growth and species occur-

rence to some extent. Example: dry oak ridge.

*Mesic sites.*--Deep, well-drained soils. Growth and species occurrence are limited only by climate.

*Hydromesic sites.*--Moderately wet soils where insufficient drainage or infrequent flooding limits growth and species occurrence to some extent. Example: better drained bottomland hardwood sites.

*Hydric sites.*--Very wet sites where excess water seriously limits both growth and species occurrence. Example: frequently flooded river bottoms and spruce bogs.

**Plant byproducts.**--Plant residues used for products such as mulch, pulp chips, and fuelwood.

**Plant residues.**--Wood and bark materials generated at manufacturing plants during production of other products.

**Poletimber stands.**--(See stand-size class.)

**Poletimber trees.**--Growing-stock trees of commercial species at least 5 inches d.b.h. but smaller than sawtimber size.

**Productive-reserved forest land.**--Forest land sufficiently productive to qualify as commercial forest land but withdrawn from timber utilization through statute, administration regulation, designation, or exclusive use for Christmas tree production, as indicated by annual shearing.

**Productive-deferred.**--Forest land sufficiently productive to qualify as commercial forest land but presently withdrawn from timber utilization because it is being considered for possible inclusion into the Wilderness system.

**Rotten trees.**--Live trees of commercial species that do not contain at least one 12-foot saw log or two saw logs 8 feet or longer, now or progressively, and/or do not meet regional specifications for freedom from defect primarily because of rot; that is, when more than 50 percent of extra cull volume in a tree is rotten.

**Rough trees.**--(a) Live trees of commercial species that do not contain at least one merchantable 12-foot saw log or two saw logs 8 feet or longer, nor or prospectively, and/or do not meet regional specifications for freedom from defect primarily because of roughness or poor form, and (b) all live trees of noncommercial species.

**Roundwood products.**--Logs, bolts, or other round sections (including chips from roundwood) cut from trees for industrial or consumer uses. (Note: Includes saw logs, veneer logs and bolts; cooperage logs and bolts; pulpwood, fuelwood; piling; poles; posts; hewn ties; mine timbers; and various other round, split, or hewn products.)

**Salvable dead trees.**--Standing or down dead trees considered merchantable by regional standards.

**Saplings.**--Live trees 1 to 5 inches d.b.h.

**Sapling-seedling stands.**--(See stand-size class.)

**Saw log.**--A log meeting minimum standards of diameter, length, and defect, including logs at least 8 feet long, sound and straight and with a minimum diameter outside bark (d.o.b.) for softwoods of 7 inches (9 inches for hardwoods) or other combinations of size and defect specified by regional standards.

**Saw log portion.**--That part of the bole of sawtimber trees between the stump and the saw log top.

**Saw log top.**--The point on the bole of sawtimber trees above which a saw log cannot be produced. The minimum saw log top is 7 inches d.o.b. for softwoods and 9 inches d.o.b. for hardwoods.

**Sawtimber stands.**--(See stand-size class.)

**Sawtimber trees.**--Growing-stock trees of commercial species containing at least a 12-foot saw log or two noncontiguous saw logs 8 feet or longer, and meeting regional specifications for freedom from defect. Softwoods must be at least 9 inches d.b.h. Hardwoods must be at least 11 inches d.b.h.

**Sawtimber volume.**--Net volume of the saw log portion of live sawtimber in board feet, International  $\frac{1}{4}$ -inch rule, from stump to a minimum 7 inches top diameter outside bark (d.o.b.) for softwoods and a minimum 9 inches top d.o.b. for hardwoods.

**Seedlings.**--Live trees less than 1 inch d.b.h. that are expected to survive. Only softwood seedlings more than 6 inches tall and hardwood seedlings more than 1 foot tall are counted.

**Short-log (rough tree).**--Sawtimber-size trees of commercial species that contain at least one merchantable 8- to 11-foot saw log but not a 12-foot saw log.

**Shrub biomass.**--The total above-ground weight (including the bark) of selected shrubs and trees less than 1 inch d.b.h.

**Site class.**--A classification of forest land in terms of inherent capacity to grow crops of industrial wood based on fully stocked natural stands.

**Site index.**--An expression of forest site quality based on the height of a free-growing dominant or codominant tree of a representative species in the forest type at age 50.

**Softwoods.**--Coniferous trees, usually evergreen, having needles or scale-like leaves.

**Stand.**--A growth of trees on a minimum of 1 acre of forest land that is stocked by forest trees of any size.

**Stand-age class.**--Age of the main stand. Main stand refers to trees of the dominant forest type and stand-size class.

**Stand-area class.**--The extent of a continuous forested area of the same forest type, stand-size class, and stand-density class.

**Stand-size class.**--A classification of forest land based on the size class of growing-stock trees on the

area; that is, sawtimber, poletimber, or seedlings and saplings.

a. **Sawtimber stands.**--Stands at least 16.7 percent stocked with growing-stock trees, with half or more of total stocking in sawtimber or poletimber trees, and with sawtimber stocking at least equal to poletimber stocking.

b. **Poletimber stands.**--Stands at least 16.7 percent stocked with growing-stock trees of which half or more of this stocking is in poletimber and/or sawtimber trees, and with poletimber stocking exceeding that of sawtimber.

c. **Sapling-seedling stands.**--Stands at least 16.7 percent stocked with growing-stock trees of which more than half of the stocking is saplings and/or seedlings.

d. **Nonstocked stands.**--Stands in which stocking of growing-stock trees is less than 16.7 percent.

**State land.**--Land either owned by States or leased to them, for 50 years or more.

**Stocking.**--The degree of occupancy of land by trees, measured by basal area and/or the number of trees in a stand by size or age and spacing, compared to the basal area and/or number of trees required to fully utilize the growth potential of the land; that is, the stocking standard.

A stocking percent of 100 indicates full utilization of the site and is equivalent to 80 square feet of basal area per acre in 5 inches d.b.h. and larger. In a stand of trees less than 5 inches d.b.h., a stocking percent of 100 would indicate that the present number of trees is sufficient to produce 80 square feet of basal area per acre when the trees reach 5 inches d.b.h.

Stands are grouped into the following stocking classes:

**Overstocked stands.**--Stands in which stocking of trees is 134.0 percent or more.

**Fully stocked stands.**--Stands in which stocking of trees is from 101.0 to 133.9 percent.

**Medium stocked stands.**--Stands in which stocking of trees is from 61.0 to 100.9 percent.

**Poorly stocked stands.**--Stands in which stocking of trees is from 16.7 to 60.9 percent.

**Nonstocked areas.**--Commercial forest land on which stocking of trees is less than 16.7 percent.

**Timber removals from growing stock.**--The volume of sound wood in growing-stock trees removed annually for forest products (including roundwood products and logging residues) and for other removals.

**Timber removals from sawtimber.**--The net board-foot volume of live sawtimber trees removed for forest products annually (including roundwood products and logging residues) and for other removals.

**Timber products output.**--All timber products cut from roundwood and byproducts of wood manufacturing plants. Roundwood products include logs, bolts, or other round sections cut from growing-stock trees, cull trees, salvable dead trees, trees on nonforest land, noncommercial species, sapling-size trees, and limbwood. Byproducts from primary manufacturing plants include slabs, edging, trimmings, miscuts, sawdust, shavings, veneer cores and clippings, and screenings of pulpmills that are used as pulpwood chips or other products.

**Tree biomass.**--The total aboveground weight (including the bark) of all trees from 1 to 5 inches in d.b.h., and the total aboveground weight (including the bark) from a 1-foot stump for trees more than 5 inches in diameter.

**Tree size class.**--A classification of trees based on diameter at breast height, including sawtimber trees, poletimber trees, saplings, and seedlings.

**Unproductive forest land.**--Forest land incapable of producing 20 cubic feet per acre of annual growth or of yielding crops of industrial wood under natural conditions because of adverse site conditions. (Note: Adverse conditions include shallow soil, dry climate, poor drainage, high elevation, steepness, and rockiness).

**Upper stem portion.**--That part of the bole of sawtimber trees above the saw log top to a minimum

top diameter of 4 inches outside bark or to the point where the central stem breaks into limbs.

**Urban and other areas.**--Areas within the legal boundaries of cities and towns; suburban areas developed for residential, industrial, or recreational purposes; schoolyards; cemeteries; roads; railroads; airports; beaches; powerlines; and other rights-of-way; or other nonforest land not included in any other specified land use class.

**Water.**--(a) *Bureau of the Census.*--Permanent inland water surfaces, such as lakes, reservoirs, and ponds at least 40 acres in area; and streams, sloughs, estuaries, and canals at least one-eighth of a statute mile wide.

(b) *Noncensus.*--Permanent inland water surfaces, such as lakes, reservoirs, and ponds from 1 to 39.9 acres in area; and streams, sloughs, estuaries, and canals from 120 feet to one-eighth of a statute mile wide.

**Wooded pasture.**--Improved pasture with more than 16.7 percent stocking in live trees but less than 25 percent stocking in growing-stock trees. Area is currently improved for grazing or there is other evidence of grazing.

**Wooded strip.**--An acre or more of natural continuous forest land that would otherwise meet survey standards for commercial forest land except that it is less than 120 feet wide.

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Table 1.--Area of land by land class, Central Unit, Wisconsin, 1968 and 1983

(In thousand acres)

Land class	1968	1983
Forest land		
Commercial forest land		
Jack pine	255.7	203.1
Red pine	68.6	135.5
White pine	59.5	77.9
Balsam fir	11.9	11.9
White spruce	2.2	2.2
Black spruce	9.0	11.6
Northern white-cedar	11.1	23.3
Tamarack	43.6	39.0
Oak-hickory	861.6	937.6
Elm-ash-soft maple	217.5	271.5
Maple-birch	390.6	506.2
Aspen	688.4	577.5
Paper birch	111.0	118.6
Exotic	--	2.2
Nonstocked	101.1	32.8
Subtotal	2,831.8	2,950.9
Noncommercial forest land		
Unproductive	21.7	21.5
Productive-reserved	3.9	30.1
Subtotal	25.6	51.6
Total	2,857.4	3,002.5
Nonforest land		
Cropland	2,489.7	2,441.0
Pasture and range	423.3	538.7
Other	1,430.9	1,188.0
Total	4,343.9	4,167.7
Total land	7,201.3	7,170.2
Water (Bureau of the Census)	111.4 <sup>1/</sup>	114.6 <sup>2/</sup>
Total land and water	7,312.7 <sup>1/</sup>	7,284.8 <sup>2/</sup>

<sup>1/</sup>U.S. Department of Commerce, Bureau of Census, 1960.

<sup>2/</sup>U.S. Department of Commerce, Bureau of Census, 1980.

Table 2.--Area of land by land use class and county, Central Unit, Wisconsin, 1983

(In thousand acres)

Land use class	All counties	County							
		Adams	Chippewa	Clark	Eau Claire	Jackson	Juneau	Marathon	Marquette
Forest land									
Commercial forest	2,950.9	234.3	225.7	316.1	154.5	371.4	252.1	358.5	94.3
Unproductive forest	21.5	--	2.5	--	--	4.6	--	4.8	--
Productive reserved	30.1	2.4	4.2	--	1.8	2.9	3.9	2.1	--
Total	3,002.5	236.7	232.4	316.1	156.3	378.9	256.0	365.4	94.3
Nonforest land									
Cropland with trees	9.9	--	1.7	2.2	--	2.3	--	2.3	--
Improved pasture with trees	99.4	--	4.7	9.3	4.6	2.2	6.5	22.9	2.3
Wooded strips	20.9	2.6	--	2.2	2.4	--	--	2.3	--
Idle farmland with trees	60.5	3.0	--	4.3	2.3	6.6	--	6.8	2.3
Marsh with trees	149.4	10.1	4.9	25.7	--	11.9	12.7	25.9	9.0
Urban and other windbreaks	69.1	10.8	4.5	2.2	4.1	3.0	8.5	8.6	6.7
Windbreaks	2.6	2.6	--	--	--	--	--	--	--
Wooded pasture	32.0	--	2.3	6.8	--	--	--	7.2	--
Subtotal	443.8	29.1	18.1	52.7	13.4	26.0	27.7	76.0	20.3
Nonforest without trees									
Cropland without trees	2,431.1	102.8	298.9	283.2	141.9	125.1	116.7	357.3	122.0
Improved pasture without trees	407.3	8.9	27.9	46.2	48.2	34.8	13.0	87.3	6.9
Idle farm without trees	60.3	5.9	2.5	--	4.6	2.1	2.2	--	6.9
Marsh without trees	259.6	8.5	21.0	26.4	2.4	32.5	21.7	31.4	20.7
Other farm-farmstead	88.8	5.9	2.3	17.6	6.9	2.1	--	18.0	2.3
Urban and other	449.4	16.9	44.6	35.2	34.6	30.5	54.0	55.8	16.1
Noncensus water	27.4	--	3.2	2.2	--	6.6	4.2	6.7	1.4
Subtotal	3,723.9	148.9	400.4	410.8	238.6	233.7	211.8	556.5	176.3
Total	4,167.7	178.0	418.5	463.5	252.0	259.7	239.5	632.5	196.6
Total land	7,170.2	414.7	650.9	779.6	408.3	638.6	495.5	997.9	290.9
Water (Bureau of the Census) <sup>1/</sup>	114.6	26.1	15.6	0.6	4.9	1.3	19.2	10.9	6.5
Total land and water <sup>1/</sup>	7,284.8	440.8	666.5	780.2	413.2	639.9	514.7	1,008.8	297.4

<sup>1/</sup>U.S. Department of Commerce, Bureau of Census, 1980.

(Table 2 continued)

(Table 2 continued)

Land use class	County				
	Monroe	Portage	Waupaca	Waushara	Wood
Forest land					
Commercial forest	245.0	174.3	172.6	145.6	206.5
Unproductive forest	2.3	--	7.3	--	--
Productive reserved	--	--	1.2	11.6	--
Total	247.3	174.3	181.1	157.2	206.5
Nonforest land					
Cropland with trees	--	--	1.4	--	--
Improved pasture with trees	6.9	10.3	3.7	12.8	13.2
Wooded strips	2.2	2.2	2.4	2.3	2.3
Idle farmland with trees	--	8.8	8.5	11.2	6.7
Marsh with trees	4.4	5.9	12.0	6.7	20.2
Urban and other windbreaks	2.2	5.8	6.2	2.3	4.2
Windbreaks	--	--	--	--	--
Wooded pasture	11.3	4.4	--	--	--
Subtotal	27.0	37.4	34.2	35.3	46.6
Nonforest without trees					
Cropland without trees	164.2	203.6	205.3	163.8	146.3
Improved pasture without trees	68.8	28.8	11.5	6.8	18.2
Idle farm without trees	4.4	8.9	9.2	--	13.6
Marsh without trees	4.4	20.1	18.5	18.3	33.7
Other farm-farmstead	9.0	11.1	9.2	--	4.4
Urban and other	53.2	31.2	13.8	20.3	43.2
Noncensus water	--	3.1	--	--	--
Subtotal	304.0	306.8	267.5	209.2	259.4
Total	331.0	344.2	301.7	244.5	306.0
Total land	578.3	518.5	482.8	401.7	512.5
Water (Bureau of the Census) <sup>1/</sup>	3.0	8.3	6.7	6.4	5.1
Total land and water <sup>1/</sup>	581.3	526.8	489.5	408.1	517.6

<sup>1/</sup>U.S. Department of Commerce, Bureau of Census, 1980.

Table 3.--Area of commercial forest land by ownership class and county, Central Unit, Wisconsin, 1983  
(In thousand acres)

Ownership class	All counties	County						
		Adams	Chippewa	Clark	Eau Claire	Jackson	Juneau	Marathon
National Forest	--	--	--	--	--	--	--	--
Miscellaneous federal	130.6	--	--	--	--	29.4	55.9	--
State	96.6	7.0	4.7	--	2.4	42.1	4.2	7.1
County and municipal	399.3	2.3	22.3	134.1	54.7	87.9	15.0	26.1
Indian	4.6	--	--	--	--	2.2	--	2.4
Forest industry	126.0	33.5	--	2.4	--	20.4	6.6	32.9
Farmer	996.7	37.6	102.0	101.8	33.3	124.1	49.4	163.1
Misc. private-corporation	129.5	14.4	17.5	4.9	2.4	4.6	21.6	14.0
Misc. private-individual	1,067.6	139.5	79.2	72.9	61.7	60.7	99.4	112.9
All owners	2,950.9	234.3	225.7	316.1	154.5	371.4	252.1	358.5

(Table 3 continued)

(Table 3 continued)

Ownership class	County					
	Marquette	Monroe	Portage	Waupaca	Waushara	Wood
National Forest	--	--	--	--	--	--
Miscellaneous federal	--	45.3	--	--	--	--
State	--	--	11.0	--	11.3	6.8
County and municipal	--	9.1	--	--	--	47.8
Indian	--	--	--	--	--	--
Forest industry	--	--	4.4	9.8	2.3	13.7
Farmer	44.8	109.2	54.1	87.4	49.1	40.8
Misc. private-corporation	--	11.4	2.2	4.9	15.8	15.8
Misc. private-individual	49.5	70.0	102.6	70.5	67.1	81.6
All owners	94.3	245.0	174.3	172.6	145.6	206.5

Table 4.--Area of commercial forest land by ownership class and site class, Central Unit, Wisconsin, 1983

(In thousand acres)

Ownership class	All classes	Site class (cubic feet of growth per acre per year)					
		225+	165-224	120-164	85-119	50-84	20-49
National Forest	--	--	--	--	--	--	--
Miscellaneous federal	130.6	--	--	--	13.1	59.6	57.9
State	96.6	--	--	6.6	6.6	51.6	31.8
County and municipal	399.3	--	--	9.2	63.9	229.2	97.0
Indian	4.6	--	--	--	--	4.6	--
Forest industry	126.0	--	--	5.2	25.9	60.2	34.7
Farmer	996.7	--	--	27.4	241.5	411.3	316.5
Misc. private-corporation	129.5	--	2.2	4.7	23.4	62.7	36.5
Misc. private-individual	1,067.6	--	2.2	45.9	190.3	493.0	336.2
All owners	2,950.9	--	4.4	99.0	564.7	1,372.2	910.6

Table 5.--Area of commercial forest land by ownership class and stand-volume class, Central Unit, Wisconsin, 1983

(In thousand acres)

Ownership class	All classes	Stand-volume class (board feet <sup>1/</sup> )		
		Less than 1,500	1,500 to 5,000	5,000+
National Forest	--	--	--	--
Miscellaneous federal	130.6	80.2	37.4	13.0
State	96.6	60.0	27.6	9.0
County and municipal	399.3	257.6	120.2	21.5
Indian	4.6	--	2.4	2.2
Forest industry	126.0	57.9	42.1	26.0
Farmer	996.7	444.7	375.9	176.1
Misc. private-corporation	129.5	64.5	53.1	11.9
Misc. private-individual	1,067.6	513.4	406.2	148.0
All owners	2,950.9	1,478.3	1,064.9	407.7

<sup>1/</sup> International 1/4-inch rule.

Table 6.--Area of privately owned commercial forest land by ownership class, owner tenure, and size of holding, Central Unit, Wisconsin, 1983

(In thousand acres)

Ownership class and owner-tenure class	All sizes	Size of holding (acres)							
		1-4	5-10	11-20	21-50	51-100	101- 500	501- 2,500	2,501- 5,000
<b>Forest industry</b>									
1-4 years	4.7	--	--	--	--	--	--	--	4.7
5-9 years	11.7	--	--	--	--	--	2.3	--	9.4
10-19 years	18.4	--	--	--	--	--	2.3	--	16.1
20+ years	91.2	--	--	--	--	2.3	2.3	--	86.6
All classes	126.0	--	--	--	--	2.3	2.3	4.6	--
<b>Farmer</b>									
1-4 years	189.2	--	--	18.8	39.1	62.1	62.4	6.8	--
5-9 years	156.0	4.9	6.9	21.6	40.3	38.8	43.5	--	--
10-19 years	323.7	4.3	16.0	28.0	73.8	109.0	92.6	--	--
20+ years	327.8	2.3	7.1	38.7	83.1	83.3	104.1	9.2	--
All classes	996.7	11.5	30.0	107.1	236.3	293.2	302.6	16.0	--
<b>Misc. priv.-corporation</b>									
1-4 years	25.4	--	--	--	11.6	4.7	4.3	4.8	--
5-9 years	21.0	--	--	--	4.5	2.3	6.9	2.5	2.4
10-19 years	27.5	--	2.3	--	2.2	4.4	4.8	9.1	--
20+ years	55.6	--	--	--	2.5	--	18.9	9.1	7.2
All classes	129.5	--	2.3	--	20.8	11.4	34.9	25.5	9.6
<b>Misc. priv.-individual</b>									
1-4 years	250.1	11.5	20.9	22.9	83.3	65.2	46.3	--	--
5-9 years	279.3	4.6	13.6	36.1	86.9	65.9	65.3	6.9	--
10-19 years	331.8	6.7	9.2	21.1	101.3	103.4	76.2	13.9	--
20+ years	206.4	2.4	2.4	19.9	71.2	55.1	50.1	2.4	--
All classes	1,067.6	25.2	46.1	100.0	342.7	289.6	237.9	23.2	--
<b>All private owners</b>									
1-4 years	469.4	11.5	20.9	41.7	134.0	132.0	113.0	11.6	--
5-9 years	468.0	9.5	20.5	57.7	131.7	107.0	115.7	11.7	2.4
10-19 years	701.4	11.0	27.5	49.1	177.3	216.8	173.6	25.3	--
20+ years	681.0	4.7	9.5	58.6	156.8	140.7	175.4	20.7	7.2
All classes	2,319.8	36.7	78.4	207.1	599.8	596.5	577.7	69.3	9.6
									144.7

Table 7.--Area of commercial forest land by forest type, stand-size class, and ownership class, Central Unit, Wisconsin, 1983  
(In thousand acres)

Forest type and stand-size class	All owners	Ownership class						Misc. priv.-corp.	Misc. priv.-indiv.
		National Forest	Misc. federal	State	County & municipal	Indian	Forest industry		
Jack pine									
Sawtimber	24.5	--	4.3	--	11.5	--	2.2	--	6.8
Poletimber	97.1	--	8.9	6.9	9.1	--	6.9	9.4	6.5
Sapling & seedling	81.5	--	11.4	8.9	9.1	--	13.9	4.4	6.8
All stands	203.1	--	24.6	15.8	20.6	2.2	20.8	20.6	13.3
Red pine									
Sawtimber	20.9	--	2.1	2.2	2.4	--	--	4.5	2.3
Poletimber	77.1	--	--	2.2	9.3	--	4.7	15.4	7.1
Sapling & seedling	37.5	--	6.9	--	2.1	--	14.3	--	38.4
All stands	135.5	--	9.0	4.4	13.8	--	19.0	19.9	60.0
White pine									
Sawtimber	59.8	--	2.2	2.3	4.6	--	4.6	23.1	4.6
Poletimber	11.3	--	2.2	--	--	--	--	--	18.4
Sapling & seedling	6.8	--	--	2.2	2.2	--	--	2.4	9.1
All stands	77.9	--	4.4	4.5	6.8	--	4.6	25.5	27.5
Balsam fir									
Sawtimber	2.3	--	--	--	--	--	--	--	--
Poletimber	--	--	--	--	--	--	--	--	--
Sapling & seedling	9.6	--	--	--	--	--	--	7.2	2.4
All stands	11.9	--	--	--	--	--	--	7.2	2.3
White spruce									
Sawtimber	--	--	--	--	--	--	--	--	--
Poletimber	--	--	--	--	--	--	--	--	--
Sapling & seedling	2.2	--	--	--	--	--	--	--	2.2
All stands	2.2	--	--	--	--	--	--	--	2.2
Black spruce									
Sawtimber	--	--	--	--	--	--	--	--	--
Poletimber	--	--	2.2	2.3	4.7	--	--	2.4	--
Sapling & seedling	11.6	--	--	2.2	2.3	4.7	--	--	--
All stands	11.6	--	--	2.2	2.3	4.7	--	2.4	--
Northern white-cedar									
Sawtimber	2.4	--	--	2.4	--	--	--	--	--
Poletimber	18.7	--	--	--	--	--	--	9.5	2.3
Sapling & seedling	2.2	--	--	--	--	--	--	--	6.9
All stands	23.3	--	--	2.4	--	--	--	9.5	2.3

(Table 7 continued on next page)

(Table 7 continued)

Forest type and stand-size class	All owners	Ownership class							
		National Forest	Misc. federal	State	County & municipal	Indian	Forest industry	Farmer	Misc. priv.-corp.
Tamarack	2.2	--	--	--	--	--	--	2.2	--
Sawtimber	16.4	--	--	--	2.5	--	7.0	--	--
Poletimber	20.4	--	--	4.4	--	--	11.4	2.2	6.9
Sapling & seedling									2.4
All stands	39.0	--	--	4.4	2.5	--	--	20.6	2.2
Oak-hickory									9.3
Sawtimber	375.2	--	8.8	7.0	13.9	--	4.8	184.2	12.0
Poletimber	384.7	--	22.4	6.5	65.6	--	7.2	110.6	20.3
Sapling & seedling	177.7	--	15.4	--	25.1	--	9.0	39.1	11.3
All stands	937.6	--	46.6	13.5	104.6	--	21.0	333.9	43.6
Elm-ash-soft maple									374.4
Sawtimber	93.9	--	2.3	2.4	2.4	--	4.8	42.4	2.4
Poletimber	95.5	--	2.3	2.3	6.9	--	2.4	39.9	2.3
Sapling & seedling	82.1	--	--	4.5	4.8	--	2.3	30.5	11.6
All stands	271.5	--	4.6	9.2	14.1	--	9.5	112.8	16.3
Maple-birch									105.0
Sawtimber	224.9	--	2.1	4.5	9.6	--	23.4	108.0	11.8
Poletimber	130.6	--	--	4.4	11.9	--	4.7	43.2	7.3
Sapling & seedling	150.7	--	2.2	13.5	18.9	--	--	74.0	--
All stands	506.2	--	4.3	22.4	40.4	--	28.1	225.2	19.1
Aspen									166.7
Sawtimber	64.8	--	6.4	2.3	7.2	--	--	25.2	--
Poletimber	268.9	--	13.1	6.7	85.7	2.4	13.7	66.1	4.9
Sapling & seedling	243.8	--	10.8	8.7	73.0	--	9.3	60.5	9.1
All stands	577.5	--	30.3	17.7	165.9	2.4	23.0	151.8	14.0
Paper birch									172.4
Sawtimber	11.6	--	--	--	2.5	--	--	6.8	--
Poletimber	51.8	--	--	--	12.0	--	--	21.1	--
Sapling & seedling	55.2	--	2.3	--	11.4	--	--	32.4	2.4
All stands	118.6	--	2.3	--	25.9	--	--	60.3	2.4
Exotic									27.7
Sawtimber	--	--	--	--	--	--	--	--	--
Poletimber	--	--	--	--	--	--	--	--	--
Sapling & seedling	2.2	--	--	--	--	--	--	--	2.2
All stands	2.2	--	--	--	--	--	--	--	2.2
Nonstocked									23.5
All types	32.8	--	2.3	--	--	--	7.0	--	--
Sawtimber	882.5	--	28.2	23.1	42.6	2.2	37.6	403.2	35.4
Poletimber	1,152.1	--	48.9	29.0	205.4	2.4	39.6	322.2	50.7
Sapling & seedling	883.5	--	51.2	44.5	151.3	--	48.8	264.3	43.4
Nonstocked	32.8	--	2.3	--	--	--	7.0	--	23.5
All stands	2,950.9	--	130.6	96.6	399.3	4.6	126.0	996.7	129.5
									1,067.6

Table 8.--Area of commercial forest land by forest type and county, Central Unit, Wisconsin, 1983

(In thousand acres)

Forest type	All counties	County									Wausau	Hood
		Adams	Chippewa	Clark	Eau Claire	Jackson	Juneau	Marathon	Marquette	Monroe	Portage	
Jack pine	203.1	40.3	4.8	7.2	62.8	45.2	2.4	22.7	4.4	9.8	4.4	11.3
Red pine	135.5	33.8	4.9	7.1	15.8	12.8	4.7	6.8	2.3	17.4	9.8	4.5
White pine	77.9	4.7	5.0	4.9	15.7	4.3	4.7	4.4	2.2	4.8	9.0	9.1
Balsam fir	11.9	--	--	--	--	--	4.7	--	--	7.2	--	--
White spruce	2.2	--	--	--	--	--	--	--	--	--	--	2.2
Black spruce	11.6	--	2.4	--	--	2.3	2.2	2.4	--	--	--	2.3
Northern white-cedar	23.3	--	--	--	--	--	9.4	--	--	4.4	7.3	2.2
Tamarack	39.0	--	7.3	--	--	13.5	--	2.3	2.3	--	2.1	4.5
Oak-hickory	937.6	103.7	34.5	61.1	78.6	148.4	103.5	16.3	56.0	142.8	48.0	43.4
Elm-ash-soot maple	271.5	2.4	36.9	19.4	7.1	13.7	15.2	51.9	8.9	9.1	22.0	48.9
Maple-birch	506.2	14.3	72.8	65.5	11.9	24.4	17.3	156.3	4.6	31.9	32.2	45.8
Aspen	577.5	25.5	42.1	134.1	33.1	61.0	49.5	87.2	4.6	11.4	35.1	74.7
Paper birch	118.6	4.8	17.2	19.0	4.8	13.8	2.1	14.0	4.5	15.8	4.3	12.3
Exotic	2.2	--	--	2.4	--	--	--	--	--	--	--	2.2
Nonstocked	32.8	4.8	7.5	2.4	--	--	--	6.9	2.2	4.6	2.2	2.2
All types	2,950.9	234.3	225.7	316.1	154.5	371.4	252.1	358.5	94.3	245.0	174.3	172.6
												206.5

Table 9.--Area of commercial forest land by county and stand-size class, Central Unit, Wisconsin, 1983

(In thousand acres)

County	All stands	Stand-size class			Nonstocked areas
		Sawtimber stands	Pole timber stands	Sapling and seedling stands	
Adams	234.3	47.2	82.1	100.2	4.8
Chippewa	225.7	66.0	84.1	68.1	7.5
Clark	316.1	71.1	129.1	113.5	2.4
Eau Claire	154.5	35.7	90.5	28.3	--
Jackson	371.4	92.3	155.8	123.3	--
Juneau	252.1	81.8	105.7	64.6	--
Marathon	358.5	114.5	143.5	93.6	6.9
Marquette	94.3	38.1	22.6	31.4	2.2
Monroe	245.0	99.5	88.8	52.1	4.6
Portage	174.3	50.3	65.6	56.2	2.2
Waupaca	172.6	95.6	51.3	25.7	--
Wausau	145.6	38.1	64.8	40.5	2.2
Wood	206.5	52.3	68.2	86.0	--
All counties	2,950.9	882.5	1,152.1	883.5	32.8

Table 10.--Area of commercial forest land by forest type, stand-size class, and site class, Central Unit, Wisconsin, 1983

(In thousand acres)

Forest type and stand-size class	All classes	Site class (cubic feet of growth per acre per year)					
		225+	165-224	120-164	85-119	50-84	20-49
Jack pine							
Sawtimber	24.5	--	--	--	--	13.3	11.2
Poletimber	97.1	--	--	--	7.1	63.2	26.8
Sapling & seedling	81.5	--	--	--	4.5	33.8	43.2
All stands	203.1	--	--	--	11.6	110.3	81.2
Red pine							
Sawtimber	20.9	--	--	6.9	4.6	7.2	2.2
Poletimber	77.1	--	4.4	31.7	38.8	2.2	--
Sapling & seedling	37.5	--	--	7.5	11.0	12.1	6.9
All stands	135.5	--	4.4	46.1	54.4	21.5	9.1
White pine							
Sawtimber	59.8	--	--	6.7	27.3	9.5	16.3
Poletimber	11.3	--	--	2.2	4.5	4.6	--
Sapling & seedling	6.8	--	--	--	4.6	2.2	--
All stands	77.9	--	--	8.9	36.4	16.3	16.3
Balsam fir							
Sawtimber	2.3	--	--	--	2.3	--	--
Poletimber	--	--	--	--	--	--	--
Sapling & seedling	9.6	--	--	2.4	4.8	2.4	--
All stands	11.9	--	--	2.4	7.1	2.4	--
White spruce							
Sawtimber	--	--	--	--	--	--	--
Poletimber	--	--	--	--	--	--	--
Sapling & seedling	2.2	--	--	--	--	--	2.2
All stands	2.2	--	--	--	--	--	2.2
Black spruce							
Sawtimber	--	--	--	--	--	--	--
Poletimber	--	--	--	--	--	--	--
Sapling & seedling	11.6	--	--	--	--	4.6	7.0
All stands	11.6	--	--	--	--	4.6	7.0
Northern white-cedar							
Sawtimber	2.4	--	--	--	--	--	2.4
Poletimber	18.7	--	--	--	--	2.4	16.3
Sapling & seedling	2.2	--	--	--	--	--	2.2
All stands	23.3	--	--	--	--	2.4	20.9

(Table 10 continued on next page)

(Table 10 continued)

Forest type and stand-size class	All classes	Site class (cubic feet of growth per acre per year)					
		225+	165-224	120-164	85-119	50-84	20-49
Tamarack							
Sawtimber	2.2	--	--	--	--	--	2.2
Poletimber	16.4	--	--	--	2.4	9.5	4.5
Sapling & seedling	20.4	--	--	--	2.4	9.0	9.0
All stands	39.0	--	--	--	4.8	18.5	15.7
Oak-hickory							
Sawtimber	375.2	--	--	4.4	83.3	176.2	111.3
Poletimber	384.7	--	--	--	30.1	216.1	138.5
Sapling & seedling	177.7	--	--	--	20.9	86.4	70.4
All stands	937.6	--	--	4.4	134.3	478.7	320.2
Elm-ash-soft maple							
Sawtimber	93.9	--	--	--	9.3	38.0	46.6
Poletimber	95.5	--	--	--	11.7	25.4	58.4
Sapling & seedling	82.1	--	--	--	4.7	33.2	44.2
All stands	271.5	--	--	--	25.7	96.6	149.2
Maple-birch							
Sawtimber	224.9	--	--	2.3	35.8	109.1	77.7
Poletimber	130.6	--	--	4.6	26.1	64.8	35.1
Sapling & seedling	150.7	--	--	4.7	30.6	78.5	36.9
All stands	506.2	--	--	11.6	92.5	252.4	149.7
Aspen							
Sawtimber	64.8	--	--	9.0	25.8	21.1	8.9
Poletimber	268.9	--	--	9.4	82.1	156.5	20.9
Sapling & seedling	243.8	--	--	4.9	67.0	127.3	44.6
All stands	577.5	--	--	23.3	174.9	304.9	74.4
Paper birch							
Sawtimber	11.6	--	--	2.3	6.9	--	2.4
Poletimber	51.8	--	--	--	4.6	31.1	16.1
Sapling & seedling	55.2	--	--	--	9.3	18.4	27.5
All stands	118.6	--	--	2.3	20.8	49.5	46.0
Exotic							
Sawtimber	--	--	--	--	--	--	--
Poletimber	--	--	--	--	--	--	--
Sapling & seedling	2.2	--	--	--	2.2	--	--
All stands	2.2	--	--	--	2.2	--	--
Nonstocked	32.8	--	--	--	--	14.1	18.7
All types							
Sawtimber	882.5	--	--	31.6	195.3	374.4	281.2
Poletimber	1,152.1	--	4.4	47.9	207.4	575.8	316.6
Sapling & seedling	883.5	--	--	19.5	162.0	407.9	294.1
Nonstocked	32.8	--	--	--	--	14.1	18.7
All stands	2,950.9	--	4.4	99.0	564.7	1,372.2	910.6

Table 11.--Area of commercial forest land by forest type and stand-age class, Central Unit, Wisconsin, 1983  
(In thousand acres)

Forest type	All ages					Stand-age class (years)							
	1-10	11-20	21-30	31-40	41-50	51-60	61-70	71-80	81-90	91-100	101-120	121-140	141+
Jack pine	203.1	11.2	61.7	28.9	38.3	43.2	13.4	4.2	2.2	--	2.2	--	--
Red pine	135.5	19.4	29.4	54.4	15.9	4.5	9.7	--	--	13.8	2.3	4.6	2.3
White pine	77.9	2.2	6.8	--	11.6	8.9	4.6	11.6	4.5	--	2.3	4.6	4.7
Balsam fir	11.9	4.8	2.4	2.4	--	2.3	--	--	--	--	--	--	--
White spruce	2.2	--	2.2	--	--	--	--	--	--	--	--	--	--
Black spruce	11.6	2.4	6.8	--	--	2.4	--	--	--	--	--	--	--
Northern white-cedar	23.3	--	--	--	--	--	11.5	2.5	4.7	2.2	2.4	--	--
Tamarack	39.0	6.9	13.5	--	2.5	2.4	4.7	4.5	4.5	2.1	--	--	--
Oak-hickory	937.6	97.8	54.4	43.6	57.5	138.9	163.0	119.3	110.7	47.5	39.3	34.1	22.6
Elm-ash-soot maple	271.5	49.2	30.6	2.3	25.4	37.9	23.4	20.8	35.2	21.5	13.8	9.0	2.4
Maple-birch	506.2	67.3	62.2	30.9	28.3	45.4	54.4	61.1	39.2	50.9	26.5	20.9	12.0
Aspen	577.5	132.6	76.5	51.1	85.9	338.0	54.0	4.5	22.8	9.8	2.3	--	--
Paper birch	118.6	25.0	21.1	11.5	25.9	11.6	11.9	9.3	2.3	--	--	--	--
Exotic	2.2	--	2.2	--	--	--	--	--	--	--	--	--	--
Nonstocked	32.8	32.8	--	--	--	--	--	--	--	--	--	--	--
All types	2,950.9	451.6	369.8	225.1	291.3	435.5	350.6	235.7	226.1	147.8	88.8	68.6	39.3
													20.7

Table 12.--Area of commercial forest land by forest type and site-index class, Central Unit, Wisconsin, 1983  
(In thousand acres)

Forest type	All classes					Site-index class (feet)					
	11-20	21-30	31-40	41-50	51-60	61-70	71-80	81-90	91+		
Jack pine	203.1	--	--	4.7	24.6	63.1	72.6	35.7	2.4	--	
Red pine	135.5	--	--	6.8	2.2	19.3	35.9	46.3	20.6	4.4	
White pine	77.9	--	--	2.3	11.7	16.4	27.2	13.6	6.7	--	
Balsam fir	11.9	--	--	--	7.1	2.4	--	--	--	--	
White spruce	2.2	--	--	--	2.2	--	--	--	--	--	
Black spruce	11.6	--	--	2.4	4.6	--	--	--	--	--	
Northern white-cedar	23.3	--	6.9	9.4	4.6	--	2.4	--	--	--	
Tamarack	39.0	--	--	4.5	11.2	11.6	6.9	2.4	2.4	--	
Oak-hickory	937.6	--	54.6	131.8	277.5	267.5	123.7	71.3	11.2		
Elm-ash-soot maple	271.5	--	--	2.2	23.2	78.8	94.3	47.3	25.7	--	
Maple-birch	506.2	--	--	4.8	26.7	118.2	176.1	106.3	60.2	13.9	
Aspen	577.5	--	--	--	35.2	122.8	188.2	147.2	60.8	23.3	
Paper birch	118.6	--	--	2.3	13.7	25.3	28.7	25.5	20.8	2.3	
Exotic	2.2	--	--	4.5	2.3	--	9.2	4.9	--	--	
Nonstocked	32.8	--	--	--	--	--	--	--	--	--	
All types	2,950.9	--	6.9	98.5	301.1	751.9	911.4	555.1	270.9	55.1	

Table 13.--Area of commercial forest land by forest type, stand-size class, and basal-area class, Central Unit, Wisconsin, 1983  
(In thousand acres)

Forest type and stand-size class	All classes	Basal area class (square feet per acre)										181+		
		0-10	11-20	21-30	31-40	41-50	51-60	61-70	71-80	81-90	91-100	101-120	121-150	151-180
Jack pine														
Sawtimber	24.5	--	--	--	2.2	--	4.4	2.4	2.3	4.2	2.2	--	--	--
Poletimber	97.1	--	--	2.3	4.6	11.1	11.2	15.8	26.8	11.6	9.2	2.3	--	2.2
Sapling & seedling	81.5	8.9	6.8	11.8	2.3	8.9	8.9	13.4	20.5	--	--	--	--	--
All stands	203.1	8.9	6.8	11.8	6.8	13.5	24.4	27.0	38.6	31.0	13.8	4.5	--	2.2
Red pine														
Sawtimber	20.9	--	--	--	--	--	--	--	2.3	4.9	2.4	4.4	4.4	2.5
Poletimber	77.1	--	--	--	--	4.4	2.4	2.2	4.4	2.4	15.6	16.1	9.0	20.6
Sapling & seedling	37.5	16.5	4.6	--	2.3	2.9	2.3	--	2.1	4.5	--	2.3	--	--
All stands	135.5	16.5	4.6	--	2.3	2.9	6.7	2.4	6.6	13.8	4.8	22.3	20.5	11.5
White pine														
Sawtimber	59.8	--	2.5	--	--	--	2.3	--	7.2	6.8	4.6	18.1	16.0	2.3
Poletimber	11.3	--	--	--	--	--	2.2	2.2	--	2.2	--	2.3	--	4.6
Sapling & seedling	6.8	--	--	--	--	2.2	2.4	--	2.2	--	--	--	--	--
All stands	77.9	--	2.5	--	--	2.2	6.9	--	9.4	9.0	4.6	20.4	16.0	6.9
Balsam fir														
Sawtimber	2.3	--	--	--	--	2.3	--	--	--	--	--	--	--	--
Poletimber	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Sapling & seedling	9.6	--	--	2.4	--	2.4	--	2.4	--	--	--	--	--	--
All stands	11.9	--	--	2.4	--	4.7	--	2.4	--	--	--	--	--	--
White spruce														
Sawtimber	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Poletimber	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Sapling & seedling	2.2	--	--	--	--	--	--	--	2.2	--	--	--	--	--
All stands	11.6	2.4	2.3	--	--	2.3	2.2	--	--	2.2	--	--	--	--
Black spruce														
Sawtimber	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Poletimber	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Sapling & seedling	11.6	2.4	2.3	--	--	2.3	2.2	--	--	--	2.4	--	--	--
All stands	11.6	2.4	2.3	--	--	2.3	2.2	--	--	--	2.4	--	--	--
Northern white-cedar														
Sawtimber	2.4	--	--	--	--	--	--	--	2.4	--	--	--	--	--
Poletimber	18.7	--	--	--	--	--	--	--	--	--	2.2	2.2	4.7	9.6
Sapling & seedling	2.2	--	--	--	--	--	--	--	--	--	2.2	--	--	--
All stands	23.3	--	--	--	--	--	--	--	2.4	--	4.4	2.2	4.7	9.6

(Table 13 continued on next page)

(Table 13 continued)

Forest type and stand-size class	All classes	Basal area class (square feet per acre)												
		0-10	11-20	21-30	31-40	41-50	51-60	61-70	71-80	81-90	91-100	101-120	121-150	151-180
Tamarack														
Sawtimber	2.2	--	--	2.2	--	--	--	--	--	6.8	4.7	--	--	--
Poletimber	16.4	--	--	2.4	2.5	--	--	--	--	6.8	4.7	--	--	--
Sapling & seedling	20.4	8.9	2.3	--	6.9	--	2.3	--	--	--	--	--	--	--
All stands	39.0	8.9	2.3	2.2	2.4	9.4	--	2.3	--	6.8	4.7	--	--	--
Oak-hickory														
Sawtimber	375.2	--	--	4.5	2.2	22.4	30.0	27.5	38.9	45.4	27.3	91.9	73.7	6.8
Poletimber	384.7	--	--	4.5	2.2	56.8	20.3	52.8	59.5	45.8	51.9	71.4	18.2	4.6
Sapling & seedling	177.7	11.2	13.7	50.4	15.8	27.2	27.3	16.1	8.9	4.6	2.5	--	--	2.3
All stands	937.6	11.2	13.7	54.9	22.5	51.8	113.1	63.9	100.6	109.5	75.6	143.8	145.1	25.0
Elm-aspen-soft maple														
Sawtimber	93.9	--	2.4	2.4	--	8.9	2.5	4.4	9.5	14.5	14.0	18.6	7.2	--
Poletimber	95.5	--	2.4	2.4	6.8	9.1	11.4	9.7	11.5	13.9	2.3	14.3	4.6	2.5
Sapling & seedling	82.1	15.8	14.4	2.4	11.9	4.7	19.0	4.8	7.0	--	--	2.1	--	--
All stands	271.5	15.8	19.2	7.2	18.7	22.7	32.9	18.9	28.0	23.4	16.8	30.4	23.2	11.8
Maple-birch														
Sawtimber	224.9	--	--	3.9	--	16.5	13.5	2.4	26.2	36.9	18.6	33.1	52.5	16.7
Poletimber	130.6	--	--	2.4	4.9	2.3	11.6	12.0	16.9	9.5	16.7	23.5	23.7	4.6
Sapling & seedling	150.7	16.7	17.5	20.8	16.4	18.2	18.7	6.8	7.0	11.8	4.8	9.8	2.2	--
All stands	506.2	16.7	17.5	27.1	21.3	37.0	43.8	21.2	50.1	58.2	40.1	66.4	78.4	19.2
Aspen														
Sawtimber	64.8	--	2.3	--	2.3	4.4	4.6	2.2	6.8	8.9	7.2	16.3	50.0	--
Poletimber	268.9	--	2.4	2.2	4.7	14.1	23.1	20.9	34.9	46.7	16.1	59.0	32.7	2.4
Sapling & seedling	243.8	33.8	48.9	37.2	29.9	37.9	18.7	21.0	7.0	7.0	--	2.4	--	--
All stands	577.5	33.8	53.6	39.4	36.9	56.4	46.4	44.1	48.7	62.6	23.3	77.7	78.4	19.2
Paper birch														
Sawtimber	11.6	--	2.3	--	2.3	4.4	4.6	2.2	6.8	8.9	7.2	16.3	4.8	--
Poletimber	51.8	--	2.4	2.2	4.7	14.1	23.1	20.9	34.9	46.7	16.1	59.0	32.7	2.4
Sapling & seedling	55.2	4.6	16.0	9.3	6.8	6.9	6.9	--	2.4	--	2.4	2.3	--	--
All stands	118.6	4.6	16.0	9.3	6.8	11.6	11.5	7.3	16.5	9.2	4.7	4.4	14.2	2.4
Exotic														
Sawtimber	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Poletimber	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Sapling & seedling	2.2	--	--	--	--	--	--	--	--	2.2	--	--	--	--
All stands	2.2	--	--	--	--	--	--	--	--	2.2	--	--	--	--
Nonstocked														
All types	32.8	9.0	11.8	--	2.5	--	--	--	--	7.1	--	2.4	--	--
Sawtimber	882.5	--	7.2	13.0	6.7	54.5	57.3	43.7	97.9	118.7	76.8	182.4	174.6	40.5
Poletimber	1,152.1	--	4.8	7.0	25.6	39.5	124.2	79.0	148.3	174.5	104.3	180.1	166.8	55.8
Sapling & seedling	883.5	118.8	126.5	134.3	85.4	120.5	106.4	66.8	61.5	30.3	7.3	23.5	2.2	--
Nonstocked	32.8	9.0	11.8	--	2.5	--	--	--	--	7.1	--	2.4	--	--
All stands	2,950.9	127.8	150.3	154.3	120.2	214.5	287.9	189.5	307.7	323.5	195.5	386.0	344.0	96.3
														53.4

Table 14.--Area of commercial forest land by stocking class of growing-stock trees and stand-size class, Central Unit, Wisconsin, 1983

(In thousand acres)

Stocking class (percent)	All stands	Stand-size class		
		Sawtimber stands	Pole timber stands	Sapling and seedling stands
Less than 16.7	32.8	--	--	--
16.7 to 60.9	647.1	246.2	227.6	173.3
61.0 to 100.9	1,256.3	354.1	543.1	339.1
101.0 to 133.9	874.7	259.2	323.4	292.1
134.0+	160.0	23.0	58.0	79.0
All classes	2,950.9	882.5	1,152.1	883.5
				32.8

Table 15.--Area of commercial forest land in plantations by forest type and stand-age class, Central Unit, Wisconsin, 1983

(In thousand acres)

Forest type	All ages	Stand-age class (years)					
		1-10	11-20	21-30	31-40	41-50	51-60
Jack pine	35.8	--	7.1	--	2.3	9.0	11.0
Red pine	114.9	19.4	27.0	50.0	11.5	4.5	2.5
White pine	22.5	2.2	4.4	--	4.6	6.8	2.2
White spruce	2.2	--	2.2	--	--	--	--
Exotic	2.2	--	2.2	--	--	--	--
Nonstocked	2.3	2.3	--	--	--	--	--
All types	179.9	23.9	42.9	50.0	18.4	20.3	15.7
					6.5	2.2	--
						--	--
						--	--

Table 16.--Area of commercial forest land with conifer understorey by forest type and conifer understorey species, Central Unit, Wisconsin, 1983

(In thousand acres)

Forest type	All species	Conifer understorey species					
		White pine	Red pine	Jack pine	Balsam fir	White spruce	Black spruce
Jack pine	119.9	6.8	2.4	108.5	--	--	--
Red pine	31.6	4.4	22.8	4.4	--	--	--
White pine	50.5	48.1	--	--	2.4	--	--
Balsam fir	9.6	--	--	--	9.6	--	--
Black spruce	11.6	--	--	--	--	9.3	--
Northern white-cedar	11.5	--	--	--	2.3	--	--
Tamarack	36.9	--	--	--	--	2.3	--
Oak-hickory	231.9	103.2	8.8	103.9	7.0	2.2	--
Elm-ash-soft maple	51.0	20.6	--	--	25.7	--	4.7
Maple-birch	99.6	47.7	2.2	6.7	31.2	--	7.1
Aspen	90.5	46.7	7.1	15.7	16.5	--	2.3
Paper birch	18.2	9.1	2.3	--	2.4	--	--
Exotic	2.2	--	4.6	--	--	2.2	--
Nonstocked	4.6	--	4.6	--	--	--	--
All types	769.6	286.6	50.2	239.2	97.1	4.4	13.8
						14.1	13.8
							2.2
							48.2

Table 17.--Area of noncommercial forest land by ownership class,  
Central Unit, Wisconsin, 1983

(In thousand acres)

Ownership class	All areas	Unproductive areas	Productive-reserved areas
National Forest	--	--	--
Miscellaneous federal	2.3	2.3	--
State	8.0	--	8.0
County and municipal	3.9	--	3.9
Indian	--	--	--
Forest industry	--	--	--
Farmer	9.4	7.1	2.3
Misc. private-corp.	4.4	--	4.4
Misc. private-indiv.	23.6	12.1	11.5
<b>Total</b>	<b>51.6</b>	<b>21.5</b>	<b>30.1</b>

Table 18.--Area of noncommercial forest land by forest type,  
Central Unit, Wisconsin, 1983

(In thousand acres)

Forest type	All areas	Unproductive areas	Productive-reserved areas
Jack pine	--	--	--
Red pine	11.3	--	11.3
White pine	--	--	--
Balsam fir	--	--	--
White spruce	--	--	--
Black spruce	2.4	2.4	--
Northern white-cedar	--	--	--
Tamarack	--	--	--
Oak-hickory	4.8	2.3	2.5
Elm-ash-soft maple	12.8	7.3	5.5
Maple-birch	2.5	2.5	--
Aspen	6.3	2.3	4.0
Paper birch	2.3	2.3	--
Exotic	6.8	--	6.8
Nonstocked	2.4	2.4	--
<b>All types</b>	<b>51.6</b>	<b>21.5</b>	<b>30.1</b>

Table 19.—Number of all live trees on commercial forest land by species group and diameter class, Central Unit, Wisconsin, 1983  
(In thousand trees)

Species group	Diameter class (inches at breast height)													
	All classes	1.0-2.9	3.0-4.9	5.0-6.9	7.0-8.9	9.0-10.9	11.0-12.9	13.0-14.9	14.0-16.9	15.0-18.9	16.0-20.9	17.0-22.9	18.0-28.9	19.0-38.9
Softwoods														
Jack pine	142,690	74,982	27,427	19,928	12,384	5,508	1,971	394	96	22	120	26	10	--
Red pine	77,746	14,937	18,138	27,681	13,041	2,479	665	415	234	120	192	316	118	--
White pine	54,563	26,632	10,246	7,515	3,842	2,320	1,272	915	730	419	203	1,028	46	--
White spruce	5,272	2,082	2,972	1,75	--	22	13	8	--	--	--	--	--	--
Black spruce	11,214	6,403	3,305	1,388	64	40	14	--	--	--	--	--	--	--
Balsam fir	27,614	15,992	7,160	2,902	1,143	314	95	--	--	8	60	34	4	--
hemlock	6,153	1,376	718	1,465	1,016	725	427	198	113	13	5	--	--	--
Tamarack	30,273	19,551	5,024	3,485	1,520	258	142	75	13	--	--	--	--	--
Eastern redcedar	1,279	1,138	--	32	56	44	9	--	--	--	--	--	--	--
Northern white-cedar	24,393	6,136	9,609	4,631	2,407	639	304	48	15	--	--	--	--	--
Other softwoods	5,255	2,892	1,362	697	175	69	49	--	11	--	--	--	--	--
Total	386,452	172,921	85,961	69,899	35,648	12,418	4,961	2,053	1,212	612	380	206	135	46
Hardwoods														
White oak	87,681	41,875	16,918	10,953	6,857	4,517	2,822	1,611	1,071	600	201	132	99	22
Select red oak	66,005	29,246	5,806	6,804	7,279	6,238	4,445	2,398	1,579	960	547	334	313	3
Other red oak	199,582	108,222	25,238	22,818	17,361	12,140	6,593	3,303	1,942	860	435	244	216	--
Select hickory	5,257	3,395	1,102	1,179	168	248	44	69	41	5	--	6	--	--
Other hickory	8,209	4,342	2,098	634	646	228	194	54	13	--	--	--	--	--
Basswood	21,407	9,808	4,218	1,325	1,996	2,010	917	509	319	162	66	41	28	8
Beech	92	--	--	--	31	--	30	10	7	6	8	--	--	--
Yellow birch	17,707	9,293	3,592	1,479	1,435	888	587	265	98	34	21	14	--	1
Hard maple	50,351	25,188	10,776	5,736	3,202	1,868	1,357	930	622	335	150	105	73	9
Soft maple	280,420	171,918	56,732	27,162	12,144	6,076	3,030	1,522	925	390	175	168	148	24
Elm	46,480	29,655	8,429	4,469	1,249	1,237	664	455	201	64	13	27	10	7
Black ash	38,496	18,238	9,553	5,666	2,510	1,457	652	277	103	26	14	--	--	--
Black & green ash	22,689	14,145	3,097	2,279	1,006	1,207	494	219	120	68	31	16	7	--
Cottonwood	79	--	--	--	27	--	11	8	--	5	12	--	8	8
Willow	1,372	1,220	--	--	25	52	22	17	7	9	8	4	6	2
Hackberry	219	219	--	--	--	--	--	--	--	--	--	--	--	--
Balsam poplar	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Bigtooth aspen	52,551	25,847	7,784	6,329	5,677	3,961	1,844	731	280	79	12	10	6	--
Quaking aspen	248,985	151,231	37,762	26,259	19,487	9,599	3,210	1,028	313	71	19	6	--	--
Paper birch	121,357	64,251	28,780	17,041	7,550	2,837	670	203	25	--	--	--	--	--
River birch	1,698	1,698	211	--	208	147	66	--	--	8	--	3	--	--
Black cherry	61,314	46,813	9,700	2,473	1,395	735	106	44	29	17	--	--	2	--
Black walnut	29	--	--	--	--	--	16	11	--	--	--	--	2	--
Butternut	1,599	1,208	--	--	144	--	71	81	40	40	13	--	2	--
Other hardwoods	7,666	4,972	1,398	601	171	223	103	19	16	6	6	--	--	--
Noncommercial species	93,694	79,972	11,230	1,841	400	185	--	--	7	--	--	--	--	--
Total	1,434,842	842,333	244,424	144,048	90,988	55,853	27,967	13,818	7,758	3,728	1,739	1,107	921	149
All species	1,821,294	1,015,254	330,385	213,947	126,636	68,271	32,928	15,871	8,970	4,340	2,119	1,313	1,056	195

Table 20.--Number of growing-stock trees on commercial forest land by species group and diameter class, Central Unit, Wisconsin, 1983  
(In thousand trees)

Species group	All classes	Diameter class (inches at breast height)												
		1.0-2.9	3.0-4.9	5.0-6.9	7.0-8.9	9.0-10.9	11.0-12.9	13.0-14.9	14.0-16.9	15.0-18.9	16.0-20.9	17.0-20.9	18.0-22.9	19.0-28.9
Softwoods														
Jack pine	137,486	74,301	26,549	17,793	11,626	5,102	1,733	323	59	--	--	--	--	--
Red pine	76,891	14,937	17,906	27,365	12,794	2,426	415	227	120	26	10	--	--	--
White pine	52,592	26,632	10,246	6,768	3,404	1,863	1,120	870	697	319	303	169	105	36
White spruce	5,272	2,082	2,972	175	--	22	13	8	--	--	--	--	--	--
Black spruce	11,214	6,403	3,305	1,388	64	40	14	--	--	--	--	--	--	--
Balsam fir	27,470	15,992	7,160	2,902	1,055	286	75	--	--	--	--	--	--	--
Hemlock	5,814	1,376	7,118	1,419	967	640	328	180	100	43	24	4	15	--
Tamarack	30,049	19,751	5,024	3,316	1,486	258	142	54	13	5	--	--	--	--
Eastern redcedar	1,229	1,138	--	32	31	28	--	--	--	--	--	--	--	--
Northern white-cedar	23,438	6,736	9,377	4,256	2,278	525	238	28	--	--	--	--	--	--
Other softwoods	4,773	2,892	1,136	549	118	18	49	--	11	--	--	--	--	--
Total	376,228	172,240	84,393	65,963	33,823	11,208	4,377	1,878	1,107	547	353	183	120	36
Hardwoods														
White oak	76,612	41,424	13,529	8,458	5,047	3,512	2,014	1,226	747	387	126	82	50	10
Select red oak	61,081	29,246	5,570	5,418	6,469	5,612	3,786	1,898	1,331	834	444	231	207	35
Other red oak	171,921	107,523	21,978	14,913	11,385	8,021	4,185	1,864	1,411	441	248	116	102	4
Select hickory	4,731	3,395	883	37	168	131	24	61	26	--	6	--	--	--
Other hickory	8,019	4,342	2,098	634	573	214	172	33	13	--	--	--	--	--
Basswood	20,330	9,808	3,974	1,234	1,772	1,772	799	472	262	141	42	29	25	--
Beech	78	--	--	--	--	31	--	30	10	7	--	--	--	--
Yellow birch	15,630	8,805	3,360	1,279	1,045	510	369	164	76	17	4	--	--	1
Hard maple	46,456	24,262	10,082	5,052	2,796	1,606	1,047	694	476	245	102	67	23	4
Soft maple	266,862	170,785	51,594	23,909	10,856	5,047	2,258	1,223	661	244	93	90	93	9
Elm	43,540	29,436	7,501	3,515	962	573	371	159	57	13	19	7	2	--
Black ash	36,123	18,238	8,146	5,124	2,289	1,354	626	248	64	20	14	--	--	--
White & green ash	21,764	14,145	3,097	2,009	702	995	450	164	97	61	31	9	4	--
Cottonwood	59	--	--	--	--	27	--	--	8	--	5	8	--	5
Willow	1,366	1,220	--	--	25	52	22	17	7	9	8	--	4	2
Hackberry	219	219	--	--	--	--	--	--	--	--	--	--	--	--
Balsam poplar	--	25,392	7,784	6,114	5,472	3,866	1,721	656	237	45	--	3	6	--
Bigtooth aspen	51,296	149,646	34,299	23,812	18,231	8,686	2,843	826	236	30	5	--	--	--
Quaking aspen	238,614	113,765	63,322	26,657	14,136	6,637	2,328	526	141	18	--	--	--	--
Paper birch	1,504	1,056	211	--	111	84	32	--	--	--	8	3	--	--
River birch	53,298	44,948	5,771	1,306	635	542	42	36	6	12	--	--	--	--
Black cherry	11	--	--	--	--	--	--	11	--	--	--	--	--	--
Black walnut	1,464	1,208	--	--	113	--	29	49	15	35	13	--	2	--
Butternut	5,578	3,800	1,172	232	80	207	66	21	--	--	--	--	--	--
Other hardwoods														
Total	1,240,381	752,219	207,706	117,182	75,426	45,464	21,614	10,193	5,579	2,583	1,159	652	531	73
All species	1,616,609	924,459	292,099	183,145	109,249	56,672	25,991	12,071	6,686	3,130	1,512	835	651	109

Table 21.--Net volume of growing stock on  
commercial forest land by species group,  
Central Unit, Wisconsin, 1968 and 1983

(In thousand cubic feet)

Species group	1968 <sup>1/</sup>	1983
<b>Softwoods</b>		
Jack pine	137,700	190,546
Red pine	36,900	232,454
White pine	103,700	172,290
White spruce	700	905
Black spruce	1,700	3,982
Balsam fir	10,300	16,335
Hemlock	27,800	26,895
Tamarack	16,500	25,976
Eastern redcedar	250	405
Northern white-cedar	24,700	30,702
Other softwoods	450	2,565
<b>Total</b>	<b>360,700</b>	<b>703,055</b>
<b>Hardwoods</b>		
White oak	111,000	160,013
Select red oak	249,200	336,908
Other red oak	137,600	317,206
Select hickory	2,800	5,344
Other hickory	6,200	11,836
Basswood	53,100	75,883
Beech	500	1,092
Yellow birch	23,700	24,323
Hard maple	78,600	115,891
Soft maple	146,000	306,458
Elm	105,600	43,125
Black ash	40,400	63,807
White and green ash	23,900	38,682
Cottonwood	--	2,368
Willow	2,400	3,034
Hackberry	--	--
Balsam poplar	100	--
Bigtooth aspen	92,200	153,865
Quaking aspen	225,200	351,029
Paper birch	66,000	127,154
River birch	3,400	2,706
Black cherry	7,900	16,345
Black walnut	200	220
Butternut	2,900	4,880
Other hardwoods	700	3,641
<b>Total</b>	<b>1,379,600</b>	<b>2,165,810</b>
<b>All species</b>	<b>1,740,300</b>	<b>2,868,865</b>

<sup>1/</sup>1968 volumes adjusted for difference in volume equations.

Table 22.--Net volume of all live trees on commercial forest land by species group and diameter class, Central Unit, Wisconsin, 1983  
(In thousand cubic feet)

Species group	All classes	Diameter class (inches at breast height)										
		5.0-6.9	7.0-8.9	9.0-10.9	11.0-12.9	13.0-14.9	15.0-16.9	17.0-18.9	19.0-20.9	21.0-22.9	23.0-22.9	29.0-38.9
Softwoods												
Jack pine	206,233	53,979	64,211	49,984	27,648	7,976	2,435	5,040	1,410	631	--	--
Red pine	235,256	101,915	76,065	23,483	10,072	9,496	7,144	19,918	19,618	15,452	12,404	8,232
White pine	186,684	11,179	16,437	18,794	205	244	208	--	--	--	--	--
White spruce	905	248	--	411	287	--	--	--	--	--	--	--
Black spruce	3,982	2,938	346	3,476	1,544	--	--	321	--	--	--	--
Balsam fir	17,699	6,346	6,012	5,375	5,242	3,967	3,319	2,007	1,642	220	1,519	--
Hemlock	29,570	2,278	4,001	9,088	2,577	2,213	1,536	408	204	--	--	--
Tamarack	26,885	10,859	95	179	310	96	--	--	--	--	--	--
Eastern redcedar	680	95	--	12,138	5,034	3,750	833	255	--	171	--	--
Northern white-cedar	33,756	11,575	1,223	622	503	686	--	298	--	--	--	--
Other softwoods	3,332	--	202,635	189,099	110,152	70,249	45,597	38,460	27,491	22,841	16,303	13,923
Total	744,382	--	--	--	--	--	--	--	--	--	8,232	--
Hardwoods												
White oak	214,146	23,271	29,700	35,032	33,858	28,471	24,972	11,329	7,228	6,106	6,108	1,505
Select red oak	391,969	20,854	42,793	60,508	65,450	49,664	45,635	36,158	25,193	21,969	5,924	--
Other red oak	485,118	48,898	79,876	98,313	83,394	60,216	46,534	26,074	16,259	11,045	13,423	1,086
Select hickory	7,595	684	--	1,168	2,101	638	1,008	168	--	397	--	--
Other hickory	13,033	2,491	3,757	2,193	3,077	1,078	437	--	--	--	--	--
Basswood	85,591	3,446	11,497	19,982	14,678	11,747	9,742	6,443	2,831	2,409	2,252	564
Beech	1,535	--	197	--	445	214	236	212	231	--	--	--
Yellow birch	34,358	2,833	6,082	7,334	8,152	4,999	2,691	1,165	579	301	--	222
Hard maple	140,765	16,393	18,044	18,018	20,378	19,356	17,861	12,713	8,785	5,600	4,661	941
Soft maple	365,878	87,535	71,839	59,339	45,716	32,115	25,624	13,571	7,003	8,742	10,006	3,014
Elm	52,781	6,449	5,479	10,193	9,588	9,474	5,445	2,491	560	1,465	895	742
Black ash	69,058	21,303	15,633	13,974	9,154	5,179	2,562	695	558	--	--	--
White & green ash	45,566	6,953	6,185	11,607	7,502	4,588	3,525	2,472	1,471	773	490	--
Cottonwood	3,010	--	--	98	--	107	190	--	249	588	716	1,062
Willow	3,453	--	--	110	411	347	415	200	463	463	205	546
Hackberry	--	--	--	--	--	--	--	--	--	--	--	--
Balsam poplar	--	--	--	--	--	--	--	--	--	--	--	--
Bigtooth aspen	160,862	18,654	36,076	43,321	31,167	18,208	9,053	2,948	413	469	553	--
Quaking aspen	376,660	91,106	118,011	91,779	45,186	19,631	8,219	2,045	511	172	--	--
Paper birch	147,747	61,603	45,464	26,698	9,268	4,014	700	--	--	--	--	--
River birch	4,304	--	1,202	1,416	1,048	--	--	--	415	--	223	--
Black cherry	27,408	9,023	8,013	6,798	1,548	734	670	546	--	--	--	76
Black walnut	566	--	--	--	266	220	--	--	--	80	--	--
Butternut	6,834	--	1,139	--	1,072	1,552	989	1,289	609	--	184	--
Other hardwoods	6,495	1,512	737	1,724	1,039	903	279	152	149	--	--	--
Noncommercial species	7,242	3,855	1,788	1,296	1,700	1,000	133	--	--	--	--	--
Total	2,651,974	426,863	504,888	512,037	393,248	274,399	206,440	127,183	71,936	55,505	62,106	15,429
All species	3,396,956	629,498	693,987	622,189	463,497	319,996	244,900	154,674	94,777	71,808	76,029	23,661
												1,940

Table 23.--Net volume of timber on commercial forest land by class of timber and softwoods and hardwoods, Central Unit, Wisconsin, 1983

(In thousand cubic feet)

Class of timber	All species	Softwoods	Hardwoods
<b>Live trees</b>			
<b>Growing-stock trees</b>			
Poletimber	1,610,585	376,548	1,234,037
Sawtimber			
Saw log portion	845,831	248,738	597,093
Upper stem portion	412,449	77,769	334,680
Subtotal	1,258,280	326,507	931,773
<b>Total growing stock</b>	<b>2,868,865</b>	<b>703,055</b>	<b>2,165,810</b>
<b>Cull trees</b>			
<b>Rough and rotten cull trees</b>			
Poletimber	225,217	15,186	210,031
Sawtimber	200,443	16,087	184,356
Subtotal	425,660	31,273	394,387
<b>Short-log trees</b>	<b>102,431</b>	<b>10,654</b>	<b>91,777</b>
<b>Total cull</b>	<b>528,091</b>	<b>41,927</b>	<b>486,164</b>
<b>All live trees</b>	<b>3,396,956</b>	<b>744,982</b>	<b>2,651,974</b>
<b>Salvable dead trees</b>			
<b>Growing-stock trees</b>			
Poletimber	43,116	7,417	35,699
Cull trees	2,036	253	1,783
<b>All salvable dead trees</b>	<b>45,152</b>	<b>7,670</b>	<b>37,482</b>
<b>All classes</b>	<b>3,442,108</b>	<b>752,652</b>	<b>2,689,456</b>

Table 24.--Net volume of all live trees by individual species, Central Unit, Wisconsin, 1983

Species	All live trees					
	Total all live	Growing stock	Short-log cull	Rough and rotten cull	Total saw log	Saw log size trees
	- Thousand cubic feet -			- Thousand board feet - <sup>1/</sup>		
<b>Softwoods</b>						
Jack pine	206,233	190,546	1,961	13,726	422,926	416,129
Red pine	235,256	232,454	137	2,665	326,159	325,587
White pine	186,684	172,290	6,945	7,449	795,158	772,302
White spruce	905	905	--	--	3,147	3,147
Black spruce	3,982	3,982	--	--	3,038	3,038
Balsam fir	17,699	16,335	--	1,364	18,838	18,838
Hemlock	29,570	26,895	641	2,034	89,779	88,210
Tamarack	26,885	25,976	191	718	35,708	34,873
Eastern redcedar	680	405	--	275	1,272	1,272
Northern white-cedar	33,756	30,702	415	2,639	41,846	40,436
Scotch pine	3,332	2,565	364	403	8,058	6,238
<b>Total</b>	<b>744,982</b>	<b>703,055</b>	<b>10,654</b>	<b>31,273</b>	<b>1,745,929</b>	<b>1,710,070</b>
<b>Hardwoods</b>						
White oak	167,030	125,339	9,334	32,357	388,649	363,912
Swamp white oak	6,971	5,138	509	1,324	19,617	18,313
Bur oak	40,145	29,536	3,234	7,375	99,020	90,432
Northern red oak	391,969	336,908	14,390	40,671	1,138,966	1,106,582
Northern pin oak	172,808	106,847	9,774	56,187	268,012	245,829
Black oak	312,310	210,359	22,245	79,706	577,972	527,011
Shagbark hickory	7,595	5,344	429	1,822	15,229	13,982
Bitternut hickory	13,033	11,836	402	795	20,819	19,733
American basswood	85,591	75,883	1,704	8,004	216,903	213,198
Beech	1,535	1,092	--	443	4,749	4,749
Yellow birch	34,358	24,323	1,527	8,508	58,330	54,922
Sugar maple	140,765	115,891	6,855	18,019	358,295	341,476
Red maple	328,384	279,262	9,220	39,902	496,781	472,281
Silver maple	37,494	27,196	3,458	6,840	100,048	91,158
American elm	45,306	36,642	1,822	6,842	99,168	94,504
Slippery elm	2,988	2,319	--	669	5,123	5,123
Rock elm	4,487	4,164	--	323	9,885	9,885
Black ash	69,058	63,807	542	4,709	101,612	100,226
White ash	28,670	24,738	954	2,978	50,553	48,316
Green ash	16,896	13,944	--	2,952	48,420	48,420
Eastern cottonwood	3,010	2,368	188	454	10,747	10,173
Black willow	3,453	3,034	214	205	11,517	10,825
Hackberry	--	--	--	--	--	--
Balsam poplar	--	--	--	--	--	--
Bigtooth aspen	160,862	153,865	1,187	5,810	268,119	266,184
Quaking aspen	376,660	351,029	1,408	24,223	331,498	328,348
Paper birch	147,747	127,154	798	19,795	57,513	55,304
River birch	4,304	2,706	--	1,598	5,566	5,566
Black cherry	27,408	16,345	357	10,706	11,999	10,963
Black walnut	566	220	--	346	1,275	1,275
Butternut	6,834	4,880	768	1,186	23,341	21,233
Boxelder	2,715	1,008	97	1,610	3,105	2,742
Black locust	3,780	2,633	361	786	4,269	3,001
<b>Total</b>	<b>2,644,732</b>	<b>2,165,810</b>	<b>91,777</b>	<b>387,145</b>	<b>4,807,100</b>	<b>4,585,666</b>
<b>All species<sup>2/</sup></b>	<b>3,389,714</b>	<b>2,868,865</b>	<b>102,431</b>	<b>418,418</b>	<b>6,553,029</b>	<b>6,295,736</b>
						<b>257,293</b>

<sup>1/</sup> International 1/4-inch rule.<sup>2/</sup> These totals do not include volume for noncommercial species. Volumes for individual noncommercial species are found in Table 25.

Table 25.--Net volume of noncommercial species on commercial forest land by individual species, Central Unit, Wisconsin, 1983

(In thousand cubic feet)

Species	Cull volume
Ailanthus	576
American hornbeam	360
Hawthorn	1,053
Eastern hophornbeam	4,837
Chokecherry	416
All species	7,242

Table 26.--Net volume of growing stock on commercial forest land by species group and county, Central Unit, Wisconsin, 1983

(In thousand cubic feet)

Species group	All counties	County							
		Adams	Chippewa	Clark	Eau Claire	Jackson	Juneau	Marathon	Marquette
Softwoods									
Jack pine	190,546	36,638	2,511	3,282	9,405	52,358	42,794	412	1,824
Red pine	232,454	40,247	5,099	10,568	23,289	32,066	21,307	2,862	10,341
White pine	172,290	11,283	10,057	13,226	7,054	21,183	9,532	13,719	8,196
White spruce	905	--	449	--	--	--	--	208	--
Black spruce	3,982	--	175	1,614	--	--	--	938	--
Balsam fir	16,335	--	--	--	--	--	--	8,756	--
Hemlock	26,895	--	88	--	--	--	--	16,718	--
Tamarack	25,976	312	3,834	--	--	1,722	534	1,974	3,779
Eastern redcedar	405	--	--	--	--	214	95	--	96
Northern white-cedar	30,702	--	--	--	--	--	--	6,658	--
Other softwoods	2,565	--	--	--	--	822	--	--	846
Total	703,055	88,480	22,213	28,690	39,748	108,365	74,262	52,245	25,082
Hardwoods									
White oak	160,013	4,685	11,520	21,772	14,109	21,656	12,824	2,478	9,525
Select red oak	336,908	7,755	25,414	39,938	16,066	63,963	29,203	34,127	5,393
Other red oak	317,206	43,498	7,205	5,095	36,201	52,208	46,527	1,253	16,023
Select hickory	5,344	--	--	--	--	826	177	--	398
Other hickory	11,836	--	4,101	532	--	--	144	2,255	--
Basswood	75,883	637	15,470	11,172	4,073	106	2,102	24,002	1,280
Beech	1,092	--	--	--	--	--	--	--	--
Yellow birch	24,323	--	1,358	1,092	--	--	--	18,586	--
Hard maple	115,891	--	12,753	11,129	1,692	--	2,226	63,910	--
Soft maple	306,458	4,416	22,068	43,128	11,853	29,243	12,635	69,527	2,977
Elm	43,125	333	7,909	5,305	334	1,042	1,075	13,653	146
Black ash	63,807	727	14,586	8,869	629	--	364	10,371	1,454
White & green ash	38,682	--	6,085	3,781	274	316	1,387	11,330	1,411
Cottonwood	2,368	253	--	--	--	552	393	--	249
Willow	3,034	675	--	--	--	293	382	--	433
Hackberry	--	--	--	--	--	--	--	--	--
Balsam poplar	--	--	--	--	--	--	--	--	--
Bigtooth aspen	153,865	3,467	21,179	26,347	5,675	28,832	6,752	17,031	--
Quaking aspen	351,029	11,083	30,744	88,189	28,532	29,235	25,040	50,195	3,132
Paper birch	127,154	1,736	18,041	18,430	8,908	12,988	7,776	18,747	537
River birch	2,706	--	--	--	669	859	587	--	--
Black cherry	16,345	563	555	961	1,366	1,492	1,032	2,049	173
Black walnut	220	--	--	--	--	--	220	--	--
Butternut	4,880	--	261	598	--	--	965	504	--
Other hardwoods	3,641	--	--	--	--	240	--	--	114
Total	2,165,810	79,828	199,249	286,338	130,381	243,851	151,811	340,018	43,245
All species	2,868,865	168,308	221,462	315,028	170,129	352,216	226,073	392,263	68,327

(Table 26 continued on next page)

(Table 26 continued)

Species group	County				
	Monroe	Portage	Waupaca	Waushara	Wood
<b>Softwoods</b>					
Jack pine	16,465	3,756	--	8,283	12,818
Red pine	1,898	26,602	17,976	38,917	1,282
White pine	15,534	12,894	20,445	15,789	13,378
White spruce	--	--	96	--	152
Black spruce	--	525	411	--	319
Balsam fir	--	66	7,513	--	--
Hemlock	--	1,962	7,982	--	145
Tamarack	--	3,379	5,325	5,117	--
Eastern redcedar	--	--	--	--	--
Northern white-cedar	--	6,975	14,995	2,074	--
Other softwoods	--	--	--	897	--
<b>Total</b>	<b>33,897</b>	<b>56,159</b>	<b>74,743</b>	<b>71,077</b>	<b>28,094</b>
<b>Hardwoods</b>					
White oak	13,366	10,187	8,561	15,888	13,442
Select red oak	49,727	15,040	21,145	6,326	22,811
Other red oak	33,067	21,590	8,485	34,437	11,617
Select hickory	2,398	--	207	1,338	--
Other hickory	340	695	3,769	--	--
Basswood	1,206	3,697	7,924	246	3,968
Beech	--	--	1,092	--	--
Yellow birch	--	392	2,658	--	237
Hard maple	2,829	3,804	14,030	--	3,518
Soft maple	15,320	15,902	42,695	6,148	30,546
Elm	2,058	1,581	7,411	1,299	979
Black ash	3,874	5,338	13,960	1,638	1,997
White & green ash	1,494	1,011	9,671	1,452	470
Cottonwood	331	--	--	590	--
Willow	--	--	1,251	--	--
Hackberry	--	--	--	--	--
Balsam poplar	--	--	--	--	--
Bigtooth aspen	12,271	5,499	9,925	7,428	9,459
Quaking aspen	8,231	19,683	8,538	1,722	46,705
Paper birch	15,826	5,369	7,870	5,561	5,365
River birch	--	--	--	--	591
Black cherry	2,585	2,448	1,916	893	312
Black walnut	--	--	--	--	--
Butternut	1,564	--	823	165	--
Other hardwoods	--	--	2,893	394	--
<b>Total</b>	<b>166,487</b>	<b>112,236</b>	<b>174,824</b>	<b>85,525</b>	<b>152,017</b>
<b>All species</b>	<b>200,384</b>	<b>168,395</b>	<b>249,567</b>	<b>156,602</b>	<b>180,111</b>

Table 27.--Net volume of sawtimber on commercial forest land by species group and county,  
Central Unit, Wisconsin, 1983

(In thousand board feet)<sup>1/</sup>

Species group	All counties	County							
		Adams	Chippewa	Clark	Eau Claire	Jackson	Juneau	Marathon	Marquette
<b>Softwoods</b>									
Jack pine	416,129	81,546	7,123	8,603	14,769	110,118	82,401	2,187	4,592
Red pine	325,587	20,487	28,031	46,413	7,717	53,586	44,733	6,570	--
White pine	772,302	35,080	52,459	72,588	36,903	89,217	40,323	70,183	29,024
White spruce	3,147	--	2,082	--	--	--	--	1,065	--
Black spruce	3,038	--	--	--	--	--	--	1,390	--
Balsam fir	18,838	--	--	--	--	--	--	10,798	--
Hemlock	88,210	--	--	--	--	--	--	55,025	--
Tamarack	34,873	1,699	--	--	--	--	--	933	5,376
Eastern redcedar	1,272	--	--	--	--	1,272	--	--	--
Northern white-cedar	40,436	--	--	--	--	--	--	10,914	--
Other softwoods	6,238	--	--	--	--	4,573	--	--	892
<b>Total</b>	<b>1,710,070</b>	<b>138,812</b>	<b>89,695</b>	<b>127,604</b>	<b>59,389</b>	<b>258,766</b>	<b>167,457</b>	<b>159,065</b>	<b>39,884</b>
<b>Hardwoods</b>									
White oak	472,657	8,980	28,864	58,994	31,210	44,748	42,910	10,372	42,287
Select red oak	1,106,582	24,656	83,878	115,347	54,353	207,378	87,423	100,493	17,536
Other red oak	772,840	82,503	23,389	7,627	66,530	125,553	112,975	5,539	65,354
Select hickory	13,982	--	--	--	--	3,483	861	--	1,483
Other hickory	19,733	--	6,513	1,275	--	--	--	3,869	--
Basswood	213,198	2,096	48,342	33,496	5,165	--	10,340	59,695	3,653
Beech	4,749	--	--	--	--	--	--	--	--
Yellow birch	54,922	--	2,975	--	--	--	--	47,976	--
Hard maple	341,476	--	33,183	34,654	1,387	--	11,438	184,487	--
Soft maple	563,439	8,226	26,114	46,804	14,149	46,892	25,134	150,477	10,446
Elm	109,512	1,431	16,087	14,081	1,129	606	4,498	35,553	693
Black ash	100,226	2,758	16,751	13,820	--	--	2,462	1,504	2,691
White & green ash	96,736	--	8,565	2,056	--	1,566	5,089	29,592	2,574
Cottonwood	10,173	1,132	--	--	--	2,557	1,810	--	1,078
Willow	10,825	2,278	--	--	--	1,345	--	--	1,855
Hackberry	--	--	--	--	--	--	--	--	--
Balsam poplar	--	--	--	--	--	--	--	--	--
Bigtooth aspen	266,184	4,318	52,529	25,661	15,443	38,950	13,636	27,668	--
Quaking aspen	328,348	11,461	38,966	92,782	25,549	20,187	16,898	65,137	4,547
Paper birch	55,304	--	9,178	4,060	852	4,678	2,097	5,421	--
River birch	5,566	--	--	--	1,549	2,070	1,010	--	--
Black cherry	10,963	1,029	--	--	--	--	1,156	3,890	--
Black walnut	1,275	--	--	--	--	--	1,275	--	--
Butternut	21,233	--	1,348	3,258	--	--	3,413	1,147	--
Other hardwoods	5,743	--	--	--	--	--	--	--	--
<b>Total</b>	<b>4,585,666</b>	<b>150,868</b>	<b>396,682</b>	<b>453,915</b>	<b>217,316</b>	<b>500,013</b>	<b>344,425</b>	<b>732,820</b>	<b>154,197</b>
<b>All species</b>	<b>6,295,736</b>	<b>289,680</b>	<b>486,377</b>	<b>581,519</b>	<b>276,705</b>	<b>758,779</b>	<b>511,882</b>	<b>891,885</b>	<b>194,081</b>

(Table 27 continued on next page)

<sup>1/</sup> International 1/4-inch rule.

(Table 27 continued)

Species group	County				
	Monroe	Portage	Waupaca	Waushara	Wood
Softwoods					
Jack pine	43,385	5,910	--	24,180	31,315
Red pine	6,682	40,259	33,205	30,491	7,413
White pine	71,444	61,914	95,561	58,355	59,251
White spruce	--	--	--	--	--
Black spruce	--	--	1,648	--	--
Balsam fir	--	--	8,040	--	--
Hemlock	--	3,740	28,951	--	494
Tamarack	--	8,854	4,035	13,976	--
Eastern redcedar	--	--	--	--	--
Northern white-cedar	--	11,385	16,681	1,456	--
Other softwoods	--	--	--	773	--
Total	121,511	132,062	188,121	129,231	98,473
Hardwoods					
White oak	47,037	37,875	30,892	40,582	47,906
Select red oak	174,869	52,716	85,555	12,854	89,524
Other red oak	72,329	68,644	25,148	88,274	28,975
Select hickory	5,170	--	985	2,000	--
Other hickory	869	2,718	4,489	--	--
Basswood	3,291	4,064	30,449	1,189	11,418
Beech	--	--	4,749	--	--
Yellow birch	--	--	2,969	--	1,002
Hard maple	9,750	5,235	53,984	--	7,358
Soft maple	23,186	34,865	108,684	15,502	52,960
Elm	6,343	1,643	20,803	3,254	3,391
Black ash	18,751	10,022	24,649	1,308	5,510
White & green ash	2,527	4,224	37,983	1,535	1,025
Cottonwood	1,065	--	--	2,531	--
Willow	--	--	5,347	--	--
Hackberry	--	--	--	--	--
Balsam poplar	--	--	--	--	--
Bigtooth aspen	29,467	12,713	25,293	8,962	11,544
Quaking aspen	3,227	15,535	1,299	778	31,982
Paper birch	9,490	6,680	7,110	3,684	2,054
River birch	--	--	--	--	937
Black cherry	3,537	1,351	--	--	--
Black walnut	--	--	--	--	--
Butternut	6,529	--	4,476	1,062	--
Other hardwoods	--	--	5,743	--	--
Total	417,437	258,285	480,607	183,515	295,586
All species	538,948	390,347	668,728	312,746	394,059

Table 28.--Net volume of growing stock on commercial forest land by species group and diameter class, Central Unit, Wisconsin, 1983  
(In thousand cubic feet)

Species group	All classes	Diameter class (inches at breast height)										
		5.0-6.9	7.0-8.9	9.0-10.9	11.0-12.9	13.0-14.9	15.0-16.9	16.0-18.9	19.0-20.9	21.0-22.9	23.0-28.9	29.0-38.9
Softwoods												
Jack pine	190,546	49,151	61,124	47,022	24,754	6,876	1,619	---	---	631	---	---
Red pine	232,454	100,819	74,848	23,053	10,072	9,496	7,085	5,040	1,410	13,838	11,429	6,849
White pine	172,290	10,333	15,087	15,864	16,939	20,692	23,878	18,400	18,981	13,874	11,429	6,849
White spruce	905	248	---	205	244	---	---	---	---	---	---	---
Black spruce	3,982	2,938	346	411	287	---	---	---	---	---	---	---
Balsam fir	16,335	6,346	5,631	3,146	1,212	---	---	---	---	---	---	---
Hemlock	26,895	2,223	3,874	4,991	4,374	3,723	2,991	1,730	1,324	220	1,445	---
Tamarack	25,976	10,415	9,012	2,577	2,213	1,147	408	204	---	---	---	---
Eastern redcedar	405	95	96	214	---	---	---	---	---	---	---	---
Northern white-cedar	30,702	10,820	11,700	4,492	3,165	525	298	---	---	---	---	---
Other softwoods	2,565	1,000	442	139	686	---	---	---	---	---	---	---
Total	703,055	194,388	182,160	102,114	63,946	42,667	36,279	25,374	21,715	14,689	12,874	6,849
Hardwoods												
White oak	160,013	18,303	21,955	27,945	25,349	22,462	18,312	11,968	4,862	4,169	3,740	948
Select red oak	336,908	17,210	38,825	55,235	57,177	40,832	39,795	32,153	21,390	13,821	16,384	4,086
Other red oak	317,206	33,421	54,130	68,076	55,585	36,090	29,508	15,046	10,902	6,554	7,278	616
Select hickory	5,344	167	1,168	1,201	391	1,315	705	---	---	397	---	---
Other hickory	11,836	2,491	3,401	2,055	2,781	671	437	---	---	---	---	---
Basswood	75,883	3,141	10,504	18,000	13,099	11,023	8,362	5,656	2,064	1,869	2,165	---
Beech	1,092	---	197	---	445	214	236	---	---	---	---	---
Yellow birch	24,323	2,564	4,601	4,780	5,544	3,502	2,214	686	230	---	---	222
Hard maple	115,891	14,812	16,453	16,140	16,440	15,671	14,323	10,077	5,152	4,120	2,182	521
Soft maple	306,458	78,892	65,566	51,643	36,162	26,808	19,643	9,371	4,271	5,235	7,580	1,287
Elm	43,125	5,424	4,426	7,935	8,339	7,879	4,401	2,235	560	1,017	684	225
Black ash	63,807	19,316	14,633	13,161	8,844	4,850	1,755	630	558	---	---	---
White & green ash	38,682	6,350	4,413	9,781	6,834	3,701	3,082	2,233	1,471	535	282	---
Cottonwood	2,368	---	98	---	190	---	249	400	---	445	986	---
Willow	3,034	---	110	411	347	415	200	463	463	332	293	---
Hackberry	---	---	---	---	---	---	---	---	---	---	---	---
Balsam poplar	---	---	---	---	---	---	---	---	---	---	---	---
Bigtooth aspen	153,865	18,162	35,032	42,562	29,993	17,086	8,165	2,066	---	---	---	---
Quaking aspen	351,029	84,704	112,742	86,032	41,955	17,424	6,804	1,124	244	244	256	553
Paper birch	127,154	53,148	40,620	22,357	7,596	2,917	516	---	---	415	---	---
River birch	2,706	---	672	837	559	---	---	---	430	---	---	223
Black cherry	16,345	5,139	4,150	5,104	---	220	---	---	---	---	---	---
Black walnut	220	---	---	919	---	449	1,048	439	1,232	609	184	---
Butternut	4,880	---	---	368	1,609	708	320	---	---	---	---	---
Other hardwoods	3,641	636	---	---	---	---	---	---	---	---	---	---
Total	2,165,810	363,920	434,983	434,854	319,257	215,294	159,103	95,619	53,591	37,973	42,032	9,184
All species	2,868,865	558,308	617,143	536,988	383,203	257,961	195,382	120,993	75,306	52,662	54,906	16,033

Table 29.--Net volume of sawtimber on commercial forest land by species group and diameter class, Central Unit, Wisconsin, 1983  
(In thousand board feet)<sup>1/</sup>

Species group	All classes	Diameter class (inches at breast height)									
		9.0-10.9	11.0-12.9	13.0-14.9	15.0-16.9	17.0-18.9	19.0-20.9	21.0-22.9	23.0-24.9	29.0-38.9	39.0+
Softwoods											
Jack pine	416,129	244,382	127,658	35,633	8,456	8,130	3,655	--	--	--	--
Red pine	325,587	133,076	57,537	53,931	40,374	28,884	79,998	67,688	41,840	--	--
White pine	772,302	62,973	78,695	104,616	127,120	101,869	107,503	--	--	--	--
White spruce	3,147	900	1,182	1,065	--	--	--	--	--	--	--
Black spruce	3,038	1,648	1,390	--	--	--	--	--	--	--	--
Balsam fir	18,838	13,208	5,630	--	--	--	--	--	--	--	--
Hemlock	88,210	17,732	17,874	16,223	13,652	8,083	6,389	1,071	7,186	--	--
Tamarack	34,873	13,381	11,789	6,288	2,274	1,141	--	--	--	--	--
Eastern redcedar	1,272	1,272	--	--	--	--	--	--	--	--	--
Northern white-cedar	40,436	21,782	15,926	2,728	--	--	--	--	--	--	--
Other softwoods	6,238	773	3,793	--	1,672	--	--	--	--	--	--
Total	1,710,070	511,127	321,474	220,484	193,548	139,977	122,022	84,724	74,874	41,840	--
Hardwoods											
White oak	472,657	--	140,269	115,506	91,317	58,897	23,847	20,180	18,036	4,605	--
Select red oak	1,106,582	--	279,286	197,904	192,961	157,370	105,589	69,017	83,234	21,221	--
Other red oak	772,840	--	266,167	170,755	140,637	72,163	52,324	31,777	35,914	3,103	--
Select hickory	13,982	--	2,022	6,583	3,485	--	--	1,892	--	--	--
Other hickory	19,733	--	14,392	3,279	2,062	--	--	--	--	--	--
Basswood	213,198	--	61,485	52,867	40,373	27,778	10,329	9,390	10,976	--	--
Beech	4,749	--	2,390	1,159	1,200	--	--	--	--	--	--
Yellow birch	54,922	--	22,617	15,818	10,546	3,432	1,202	--	--	--	--
Hard maple	341,476	--	78,551	76,598	71,920	51,446	26,690	21,699	11,703	2,871	--
Soft maple	563,439	--	199,701	137,915	95,894	44,487	20,130	24,420	34,963	5,929	--
Elm	109,512	--	34,273	34,129	19,383	10,015	2,614	4,736	3,284	1,078	--
Black ash	100,226	--	56,618	28,004	9,427	3,317	2,860	--	--	--	--
White & green ash	96,736	--	39,890	19,539	15,304	11,028	7,103	2,542	1,330	--	--
Cottonwood	10,173	--	--	791	--	1,078	1,740	--	2,008	4,556	--
Willow	10,825	--	1,481	1,713	843	1,964	1,999	--	1,480	1,345	--
Hackberry	--	--	--	--	--	--	--	--	--	--	--
Balsam poplar	--	--	--	--	--	--	--	--	--	--	--
Birch											
Bigtooth aspen	266,184	--	134,222	79,188	38,656	10,037	--	1,284	2,827	--	--
Quaking aspen	328,348	--	197,826	87,415	35,634	6,122	1,351	--	--	--	--
Paper birch	55,304	--	37,495	15,063	2,746	--	--	--	--	--	--
River birch	5,566	--	2,559	--	--	--	1,947	--	1,060	--	--
Black cherry	10,963	--	3,929	3,842	1,029	2,163	--	--	--	--	--
Black walnut	1,275	--	--	1,275	--	--	--	--	--	--	--
Butternut	21,233	--	2,651	5,840	2,367	6,327	3,129	--	919	--	--
Other hardwoods	5,743	--	3,925	1,818	--	--	--	--	--	--	--
Total	4,585,666	--	1,581,749	1,056,969	775,784	467,624	262,854	186,937	207,734	46,015	--
All species	6,295,736	511,127	1,903,223	1,277,453	969,332	607,601	384,876	271,661	282,608	87,855	--

<sup>1/</sup> International 1/4-inch rule.

Table 30.--Net volume of growing stock on commercial forest land by species group and forest type,  
Central Unit, Wisconsin, 1983

(In thousand cubic feet)

Species group	All types	Forest type						Northern white-cedar
		Jack pine	Red pine	White pine	Balsam fir	White spruce	Black spruce	
<b>Softwoods</b>								
Jack pine	190,546	113,248	5,705	5,149	--	--	--	--
Red pine	232,454	6,570	200,820	11,284	539	--	--	--
White pine	172,290	2,819	6,436	74,502	1,822	--	--	637
White spruce	905	--	96	--	--	152	--	--
Black spruce	3,982	--	346	--	--	--	1,145	424
Balsam fir	16,335	--	--	--	4,693	--	--	3,257
Hemlock	26,895	--	--	--	--	--	--	1,193
Tamarack	25,976	--	--	370	--	--	896	1,126
Eastern redcedar	405	214	--	--	--	--	--	--
Northern white-cedar	30,702	--	--	--	--	--	--	20,521
Other softwoods	2,565	--	1,722	--	--	--	--	--
<b>Total</b>	<b>703,055</b>	<b>122,851</b>	<b>215,125</b>	<b>91,305</b>	<b>7,064</b>	<b>152</b>	<b>2,041</b>	<b>27,158</b>
<b>Hardwoods</b>								
White oak	160,013	753	368	2,382	--	--	--	--
Select red oak	336,908	2,058	775	781	171	--	--	163
Other red oak	317,206	8,999	3,206	6,446	--	--	--	144
Select hickory	5,344	--	--	334	--	--	--	--
Other hickory	11,836	--	--	--	--	--	--	--
Basswood	75,883	--	209	--	167	--	--	296
Beech	1,092	--	418	--	--	--	--	--
Yellow birch	24,323	--	--	370	--	--	--	338
Hard maple	115,891	--	796	1,514	--	--	--	--
Soft maple	306,458	--	212	3,692	149	--	--	778
Elm	43,125	--	--	--	187	--	--	310
Black ash	63,807	--	--	867	924	--	--	1,063
White & green ash	38,682	--	416	--	--	--	--	--
Cottonwood	2,368	98	--	--	--	--	--	--
Willow	3,034	--	--	--	--	--	--	--
Hackberry	--	--	--	--	--	--	--	--
Balsam poplar	--	--	--	--	--	--	--	--
Bigtooth aspen	153,865	908	212	2,358	--	--	--	--
Quaking aspen	351,029	3,783	160	7,910	--	--	--	981
Paper birch	127,154	395	--	1,235	479	--	--	1,449
River birch	2,706	--	--	--	--	--	--	--
Black cherry	16,345	--	--	948	--	--	--	--
Black walnut	220	--	--	--	--	--	--	--
Butternut	4,880	--	--	--	--	--	--	--
Other hardwoods	3,641	--	--	--	--	--	--	--
<b>Total</b>	<b>2,165,810</b>	<b>16,994</b>	<b>6,772</b>	<b>28,837</b>	<b>2,077</b>	<b>--</b>	<b>--</b>	<b>5,522</b>
<b>All species</b>	<b>2,868,865</b>	<b>139,845</b>	<b>221,897</b>	<b>120,142</b>	<b>9,131</b>	<b>152</b>	<b>2,041</b>	<b>32,680</b>

(Table 30 continued on next page)

(Table 30 continued)

Species group	Tamarack	Forest type						
		Oak-hickory	Elm-ash-soft maple	Maple-birch	Aspen	Paper birch	Exotic	Non-stocked
<b>Softwoods</b>								
Jack pine	--	42,821	863	3,893	17,041	1,642	--	184
Red pine	--	5,468	387	2,775	2,445	2,166	--	--
White pine	869	28,469	11,684	34,456	5,994	4,602	--	--
White spruce	--	--	208	449	--	--	--	--
Black spruce	--	--	411	287	1,369	--	--	--
Balsam fir	--	445	1,699	5,266	686	289	--	--
Hemlock	--	145	2,322	23,057	178	--	--	--
Tamarack	17,386	--	4,696	--	483	593	--	426
Eastern redcedar	--	191	--	--	--	--	--	--
Northern white-cedar	270	238	4,242	4,135	--	1,296	--	--
Other softwoods	--	287	--	--	--	--	556	--
<b>Total</b>	<b>18,525</b>	<b>78,064</b>	<b>26,512</b>	<b>74,318</b>	<b>28,196</b>	<b>10,588</b>	<b>556</b>	<b>610</b>
<b>Hardwoods</b>								
White oak	--	116,424	7,918	17,711	8,518	5,473	--	466
Select red oak	--	242,013	8,773	52,333	23,865	5,821	--	155
Other red oak	--	258,680	5,530	10,724	21,112	976	--	1,389
Select hickory	--	4,037	207	--	--	766	--	--
Other hickory	--	4,936	--	6,103	797	--	--	--
Basswood	--	7,850	10,153	52,988	3,306	426	--	488
Beech	--	--	--	674	--	--	--	--
Yellow birch	86	648	4,007	18,342	--	532	--	--
Hard maple	--	10,464	1,025	96,882	3,108	2,102	--	--
Soft maple	584	50,084	88,671	102,929	53,386	5,973	--	--
Elm	125	4,577	12,157	21,140	2,394	1,373	--	862
Black ash	--	2,321	42,314	8,540	5,479	1,813	--	486
White & green ash	--	6,613	8,600	21,490	972	591	--	--
Cottonwood	--	1,159	393	253	232	233	--	--
Willow	--	--	1,344	433	1,057	200	--	--
Hackberry	--	--	--	--	--	--	--	--
Balsam poplar	--	--	--	--	--	--	--	--
Bigtooth aspen	558	48,866	187	20,090	76,407	4,279	--	--
Quaking aspen	851	32,999	16,460	33,131	241,457	12,855	--	442
Paper birch	530	23,514	9,800	18,878	33,631	36,968	--	275
River birch	--	525	2,181	--	--	--	--	--
Black cherry	--	6,879	2,098	4,177	1,838	405	--	--
Black walnut	--	--	--	220	--	--	--	--
Butternut	--	2,129	--	2,158	282	311	--	--
Other hardwoods	--	370	2,893	114	264	--	--	--
<b>Total</b>	<b>2,734</b>	<b>825,088</b>	<b>224,711</b>	<b>489,310</b>	<b>478,105</b>	<b>81,097</b>	<b>--</b>	<b>4,563</b>
<b>All species</b>	<b>21,259</b>	<b>903,152</b>	<b>251,223</b>	<b>563,628</b>	<b>506,301</b>	<b>91,685</b>	<b>556</b>	<b>5,173</b>

Table 31.--Net volume of sawtimber on commercial forest land by species group and forest type,  
Central Unit, Wisconsin, 1983

(In thousand board feet)<sup>1/</sup>

Species group	All types	Forest type						Northern white-cedar
		Jack pine	Red pine	White pine	Balsam fir	White spruce	Black spruce	
<b>Softwoods</b>								
Jack pine	416,129	216,356	10,606	11,650	--	--	--	--
Red pine	325,587	20,778	201,784	43,508	3,124	--	--	--
White pine	772,302	11,742	11,584	332,967	9,527	--	--	1,984
White spruce	3,147	--	--	--	--	--	--	--
Black spruce	3,038	--	--	--	--	--	--	--
Balsam fir	18,838	--	--	--	5,391	--	--	2,774
Hemlock	88,210	--	--	--	--	--	--	3,506
Tamarack	34,873	--	--	1,959	--	--	--	854
Eastern redcedar	1,272	1,272	--	--	--	--	--	--
Northern white-cedar	40,436	--	--	--	--	--	--	24,515
Other softwoods	6,238	--	6,238	--	--	--	--	--
<b>Total</b>	<b>1,710,070</b>	<b>250,148</b>	<b>230,212</b>	<b>390,084</b>	<b>18,042</b>	<b>--</b>	<b>--</b>	<b>33,633</b>
<b>Hardwoods</b>								
White oak	472,657	--	2,079	7,601	--	--	--	--
Select red oak	1,106,582	6,145	1,742	3,016	850	--	--	822
Other red oak	772,840	19,446	9,386	16,898	--	--	--	711
Select hickory	13,982	--	--	--	--	--	--	--
Other hickory	19,733	--	--	--	--	--	--	--
Basswood	213,198	--	960	--	855	--	--	1,567
Beech	4,749	--	1,110	--	--	--	--	--
Yellow birch	54,922	--	--	1,307	--	--	--	--
Hard maple	341,476	--	895	7,033	--	--	--	--
Soft maple	563,439	--	1,084	5,818	--	--	--	1,816
Elm	109,512	--	--	--	--	--	--	707
Black ash	100,226	--	--	5,002	1,392	--	--	997
White & green ash	96,736	--	2,188	--	--	--	--	--
Cottonwood	10,173	--	--	--	--	--	--	--
Willow	10,825	--	--	--	--	--	--	--
Hackberry	--	--	--	--	--	--	--	--
Balsam poplar	--	--	--	--	--	--	--	--
Bigtooth aspen	266,184	800	--	867	--	--	--	--
Quaking aspen	328,348	--	--	2,159	--	--	--	2,475
Paper birch	55,304	--	--	--	--	--	--	780
River birch	5,566	--	--	--	--	--	--	--
Black cherry	10,963	--	--	--	--	--	--	--
Black walnut	1,275	--	--	--	--	--	--	--
Butternut	21,233	--	--	--	--	--	--	--
Other hardwoods	5,743	--	--	--	--	--	--	--
<b>Total</b>	<b>4,585,666</b>	<b>26,391</b>	<b>19,444</b>	<b>49,701</b>	<b>3,097</b>	<b>--</b>	<b>--</b>	<b>9,875</b>
<b>All species</b>	<b>6,295,736</b>	<b>276,539</b>	<b>249,656</b>	<b>439,785</b>	<b>21,139</b>	<b>--</b>	<b>--</b>	<b>43,508</b>

(Table 31 continued on next page)

<sup>1/</sup> International 1/4-inch rule.

(Table 31 continued)

Species group	Tamarack	Forest type					
		Oak-hickory	Elm-ash-soft maple	Maple-birch	Aspen	Paper birch	Exotic
<b>Softwoods</b>							
Jack pine	--	98,735	3,321	12,402	59,242	3,817	--
Red pine	--	18,515	2,220	13,036	9,942	12,680	--
White pine	3,921	129,376	52,574	171,672	29,836	17,119	--
White spruce	--	--	1,065	2,082	--	--	--
Black spruce	--	--	1,648	1,390	--	--	--
Balsam fir	--	--	2,910	6,885	878	--	--
Hemlock	--	494	5,560	77,924	726	--	--
Tamarack	13,383	--	12,705	--	2,652	980	2,340
Eastern redcedar	--	--	--	--	--	--	--
Northern white-cedar	--	--	4,132	9,600	--	2,189	--
Other softwoods	--	--	--	--	--	--	--
<b>Total</b>	<b>17,304</b>	<b>247,120</b>	<b>86,135</b>	<b>294,991</b>	<b>103,276</b>	<b>36,785</b>	<b>--</b>
<b>Hardwoods</b>							
White oak	--	328,394	30,939	57,848	23,614	20,506	--
Select red oak	--	789,672	35,438	187,451	56,506	24,129	811
Other red oak	--	601,836	23,955	37,681	56,351	4,462	2,114
Select hickory	--	10,426	985	--	--	2,571	--
Other hickory	--	6,678	--	13,055	--	--	--
Basswood	--	22,560	17,225	158,592	10,122	1,317	--
Beech	--	--	--	3,639	--	--	--
Yellow birch	--	905	7,373	43,601	--	1,736	--
Hard maple	--	27,151	2,873	300,352	926	2,246	--
Soft maple	766	76,557	223,795	212,469	31,284	9,850	--
Elm	--	9,794	31,187	58,172	6,877	641	2,134
Black ash	--	1,545	70,721	16,147	1,664	2,758	--
White & green ash	--	8,978	34,949	49,088	--	1,533	--
Cottonwood	--	5,080	1,810	1,132	1,086	1,065	--
Willow	--	--	5,849	1,855	2,278	843	--
Hackberry	--	--	--	--	--	--	--
Balsam poplar	--	--	--	--	--	--	--
Bigtooth aspen	1,961	83,614	--	36,150	128,807	13,985	--
Quaking aspen	--	35,592	28,679	51,367	196,746	11,330	--
Paper birch	--	9,032	6,600	17,412	4,111	17,369	--
River birch	--	1,010	4,556	--	--	--	--
Black cherry	--	3,478	--	6,420	--	1,065	--
Black walnut	--	--	--	1,275	--	--	--
Butternut	--	9,583	--	11,650	--	--	--
Other hardwoods	--	--	5,743	--	--	--	--
<b>Total</b>	<b>2,727</b>	<b>2,031,885</b>	<b>532,677</b>	<b>1,265,356</b>	<b>520,372</b>	<b>117,406</b>	<b>--</b>
<b>All species</b>	<b>20,031</b>	<b>2,279,005</b>	<b>618,812</b>	<b>1,560,347</b>	<b>623,648</b>	<b>154,191</b>	<b>--</b>
							<b>9,075</b>

Table 32.--Net volume of growing stock on commercial forest land by species group and ownership class, Central Unit, Wisconsin, 1983  
(In thousand cubic feet)

Species group	All owners	Ownership class						Misc. priv.-corp.	Misc. priv.-indiv.
		National Forest	Misc. federal	State	County & municipal	Indian	Forest industry		
<b>Softwoods</b>									
Jack pine	190,546	--	20,076	12,423	20,981	3,247	9,439	32,633	7,555
Red pine	232,554	--	8,932	10,871	28,377	--	15,644	46,747	16,677
White pine	172,290	--	9,322	7,304	10,072	--	4,557	63,048	5,320
White spruce	905	--	--	--	--	--	--	657	--
Black spruce	3,982	--	--	--	319	1,789	--	287	752
Balsam fir	16,335	--	--	--	--	--	--	474	10,393
Hemlock	26,895	--	--	--	608	--	--	3,579	17,062
Tamarack	25,976	--	534	335	1,696	--	--	312	12,662
Eastern redcedar	405	--	--	--	--	--	--	405	--
Northern white-cedar	30,702	--	--	--	1,707	--	--	1,052	16,118
Other softwoods	2,565	--	--	--	--	--	--	1,024	1,169
<b>Total</b>	<b>703,055</b>	--	<b>38,864</b>	<b>33,567</b>	<b>62,915</b>	<b>3,247</b>	<b>35,344</b>	<b>201,501</b>	<b>35,712</b>
<b>Hardwoods</b>									
White oak	160,013	--	1,347	1,056	15,048	--	1,092	76,899	9,542
Select red oak	336,908	--	9,595	5,006	34,671	282	9,694	159,992	11,271
Other red oak	317,206	--	13,446	13,512	30,692	--	6,463	90,280	16,496
Select hickory	5,344	--	--	--	--	--	--	3,060	--
Other hickory	11,536	--	--	480	580	--	2,959	5,853	--
Basswood	75,883	--	--	256	6,356	--	7,578	24,626	5,612
Beech	1,092	--	--	--	--	--	--	438	--
Yellow birch	24,323	--	--	155	165	--	6,273	10,061	2,035
Hard maple	115,891	--	--	1,169	2,959	--	15,025	48,384	5,634
Soft maple	306,458	--	9,331	3,073	32,099	1,529	19,435	105,334	4,591
Elm	43,125	--	--	1,376	1,751	--	2,600	22,137	43,763
Black ash	63,807	--	--	2,301	4,143	--	1,813	35,525	187
White & green ash	38,682	--	--	--	1,077	--	2,707	19,649	2,268
Cottonwood	2,368	--	--	--	--	--	--	1,396	491
Willow	3,034	--	--	675	--	--	--	1,684	481
Hackberry	--	--	--	--	--	--	--	--	675
Balsam poplar	--	--	--	--	--	--	--	--	--
Bigtooth aspen	153,865	--	5,183	3,190	36,591	--	3,194	53,219	2,459
Quaking aspen	351,029	--	15,366	13,842	88,570	2,320	14,391	84,134	50,029
Paper birch	127,154	--	2,167	1,456	23,179	--	3,913	51,384	121,633
River birch	2,706	--	--	--	126	--	--	921	3,245
Black cherry	16,345	--	--	468	470	--	926	9,372	5,109
Black walnut	220	--	--	--	--	--	--	284	2,983
Butternut	4,880	--	--	--	--	--	--	504	605
Other hardwoods	3,641	--	--	--	--	--	--	--	1,008
<b>Total</b>	<b>2,165,810</b>	--	<b>56,435</b>	<b>48,015</b>	<b>278,476</b>	<b>4,131</b>	<b>98,347</b>	<b>307,835</b>	<b>80,974</b>
All species	2,868,865	--	95,299	81,582	341,391	7,378	133,691	1,009,336	116,686
									1,083,502
									791,597

Table 33.--Net volume of sawtimber on commercial forest land by species group and ownership class, Central Unit, Wisconsin, 1983  
(In thousand board feet)<sup>1/</sup>

Species group	All owners	Ownership class						Misc. priv.-corp.	Misc. priv.-indiv.
		National Forest	Misc. federal	State	County & municipal	Indian	Forest industry		
<b>Softwoods</b>									
Jack pine	416,129	--	51,002	30,864	34,775	12,072	12,160	92,104	15,605
Red pine	325,587	--	33,546	12,397	62,699	--	13,229	78,889	11,473
White pine	772,302	--	39,272	27,286	49,391	--	20,325	311,777	24,222
White spruce	3,147	--	--	--	--	--	--	3,147	--
Black spruce	3,038	--	--	--	--	--	1,390	--	--
Balsam fir	18,838	--	--	--	1,637	--	--	1740	13,759
Hemlock	88,210	--	--	--	--	--	12,918	54,755	3,173
Tamarack	34,873	--	--	--	--	--	1,699	14,321	8,932
Eastern redcedar	1,272	--	--	--	--	--	--	1,272	--
Northern white-cedar	40,436	--	--	--	5,678	--	--	16,272	--
Other softwoods	6,238	--	--	--	--	--	--	4,573	773
<b>Total</b>	<b>1,710,070</b>	--	<b>123,820</b>	<b>77,862</b>	<b>146,775</b>	<b>12,072</b>	<b>62,461</b>	<b>591,133</b>	<b>64,378</b>
<b>Hardwoods</b>									
White oak	472,657	--	3,554	3,012	24,381	--	3,410	268,906	22,471
Select red oak	1,106,582	--	16,499	10,022	74,933	--	34,156	584,915	349,797
Other red oak	772,840	--	24,371	40,821	65,396	--	15,264	226,015	34,988
Select hickory	13,982	--	--	--	--	--	7,265	--	365,619
Other hickory	19,733	--	--	1,710	--	--	3,526	9,846	--
Basswood	213,198	--	--	--	10,293	--	22,625	82,802	12,607
Beech	4,749	--	--	--	--	--	--	2,439	--
Yellow birch	54,922	--	--	--	--	--	20,188	18,181	3,678
Hard maple	341,776	--	--	3,843	1,091	--	53,579	140,798	12,875
Soft maple	563,439	--	14,131	1,136	17,065	--	31,198	262,944	23,041
Elm	109,512	--	--	2,693	3,679	--	9,179	55,402	119,124
Black ash	100,226	--	--	5,395	--	--	4,350	65,538	214,588
White & green ash	96,736	--	--	--	1,052	--	11,437	45,648	8,995
Cottonwood	10,173	--	--	--	--	--	--	6,199	1,810
Willow	10,825	--	--	2,278	--	--	--	7,202	--
Hackberry	--	--	--	--	--	--	--	--	--
Balsam poplar	--	--	--	--	--	--	--	--	--
Bigtooth aspen	266,184	--	5,356	1,552	41,856	--	6,595	125,000	1,969
Quaking aspen	328,348	--	9,247	9,051	50,742	--	20,468	102,286	3,253
Paper birch	55,304	--	913	--	2,430	--	4,678	24,820	4,282
River birch	5,566	--	--	--	--	--	--	2,070	--
Black cherry	10,963	--	--	1,331	--	--	--	7,538	--
Black walnut	1,275	--	--	--	--	--	--	--	1,275
Butternut	21,233	--	--	--	--	--	1,589	12,674	3,407
Other hardwoods	5,743	--	--	--	--	--	--	--	3,563
<b>Total</b>	<b>4,585,666</b>	--	<b>74,437</b>	<b>82,844</b>	<b>292,918</b>	--	<b>242,242</b>	<b>2,058,488</b>	<b>182,524</b>
<b>All species</b>	<b>6,295,736</b>	--	<b>198,257</b>	<b>160,706</b>	<b>439,693</b>	<b>12,072</b>	<b>304,703</b>	<b>2,649,621</b>	<b>246,902</b>
									<b>1,662,213</b>
									<b>2,283,782</b>

<sup>1/</sup> International 1/4-inch rule.

Table 34.--Net volume of growing stock on commercial forest land by forest type and stand-age class, Central Unit, Wisconsin, 1983

(In thousand cubic feet)

Forest type	All ages	Stand-age class (years)												
		1-10	11-20	21-30	31-40	41-50	51-60	61-70	71-80	81-90	91-100	101-120	121-140	141+
Jack pine	139,845	343	18,075	15,696	35,311	46,971	15,396	4,387	3,666	---	---	---	---	---
Red pine	221,897	152	34,557	109,825	47,666	5,630	18,138	---	---	5,929	---	---	---	---
White pine	120,142	281	6,238	---	11,248	17,036	6,219	20,893	13,355	19,821	1,276	11,862	4,692	7,221
Balsam fir	9,131	5,652	1,771	267	---	1,441	---	---	---	---	---	---	---	---
White spruce	152	---	152	---	---	---	---	---	---	---	---	---	---	---
Black spruce	2,041	175	1,036	---	---	830	---	---	---	---	---	---	---	---
Northern white-cedar	32,680	---	---	---	1,513	3,059	15,312	4,986	5,955	1,846	4,581	---	---	---
Tamarack	21,259	1,804	1,712	---	14,702	46,955	144,809	201,248	3,700	4,120	3,257	2,094	---	---
Oak-hickory	903,152	30,329	13,343	13,343	20,697	42,539	23,909	21,113	128,335	133,989	59,326	50,492	46,886	17,682
Elm-ash-soft maple	251,223	15,140	8,629	136	21,404	34,286	55,249	80,018	93,921	56,724	29,286	19,395	11,504	2,151
Maple-birch	563,628	18,618	27,045	21,404	181,248	78,516	6,206	28,037	74,030	53,568	54,190	25,850	15,118	10,331
Aspen	506,301	29,725	25,793	31,660	93,756	6,947	16,847	14,065	1,850	---	---	---	---	---
Paper birch	91,685	3,020	11,841	5,904	31,211	---	---	---	---	---	---	---	---	---
Exotic	556	---	556	---	---	---	---	---	---	---	---	---	---	---
Nonstocked	5,173	5,173	---	---	---	---	---	---	---	---	---	---	---	---
All types	2,868,865	110,412	150,748	205,594	322,643	505,759	459,303	298,626	300,401	206,297	141,329	96,102	39,643	32,008

Table 35.--Net volume of sawtimber on commercial forest land by forest type and stand-age class, Central Unit, Wisconsin, 1983

(In thousand board feet)<sup>1/</sup>

Forest type	All ages	Stand-age class (years)												
		1-10	11-20	21-30	31-40	41-50	51-60	61-70	71-80	81-90	91-100	101-120	121-140	141+
Jack pine	276,539	684	16,788	12,772	63,921	98,346	52,308	14,270	17,450	---	---	---	---	---
Red pine	249,656	790	23,630	60,393	34,132	22,393	76,006	46,671	32,213	32,312	5,229	55,894	22,149	35,683
White pine	439,785	---	3,121	30,235	56,332	21,988	78,115	46,723	32,213	7,384	138	186,942	67,462	62,850
Balsam fir	21,139	16,261	850	855	---	3,173	---	---	---	---	---	---	---	---
White spruce	---	---	---	---	---	---	---	---	---	---	---	---	---	---
Black spruce	---	---	---	---	---	---	---	---	---	---	---	---	---	---
Northern white-cedar	43,508	3,921	766	---	1,961	868	4,035	5,751	423,172	220,138	189,851	93,584	30,44	19,332
Tamarack	20,031	3,921	36,812	30,063	73,776	199,398	380,034	350,457	423,172	172,809	240,827	181,600	207,592	91,666
Oak-hickory	2,279,005	56,000	24,723	12,211	35,507	66,551	39,723	33,481	350,457	423,172	172,809	240,827	181,600	207,592
Elm-ash-soft maple	618,812	61,519	43,536	62,907	101,336	161,664	240,827	181,600	240,827	181,600	240,827	181,600	240,827	181,600
Maple-birch	1,560,347	39,724	17,547	36,022	106,358	177,582	89,689	20,828	71,694	44,408	22,000	---	---	---
Aspen	623,648	37,520	16,244	4,558	40,479	8,581	27,358	47,533	5,150	---	---	---	---	---
Paper birch	154,191	4,188	---	---	---	---	---	---	---	---	---	---	---	---
Exotic	---	---	---	---	---	---	---	---	---	---	---	---	---	---
Nonstocked	9,075	9,075	---	---	---	---	---	---	---	---	---	---	---	---
All types	6,295,736	194,391	139,438	155,199	417,315	735,653	863,522	801,253	934,141	703,106	549,638	3/8,744	167,496	141,540

<sup>1/</sup> International 1/4-inch rule

Table 36.--Net volume of growing stock on commercial forest land by forest type, stand-size class, and basal-area class, Central Unit, Wisconsin, 1983

(In thousand cubic feet)

Forest type and stand-size class	All classes	Basal-area class (square feet per acre)					
		0-10	11-20	21-30	31-40	41-50	51-60
Jack pine							
Sawtimber	27,508	--	--	--	811	--	3,820
Poletimber	89,310	--	--	--	2,059	2,037	6,154
Sapling & seedling	23,027	--	662	873	475	1,202	2,910
All stands	139,845	--	662	873	3,345	3,239	12,884
Red pine							
Sawtimber	38,233	--	--	--	--	--	--
Poletimber	177,318	--	--	--	--	--	1,769
Sapling & seedling	6,346	152	--	--	222	--	--
All stands	221,897	152	--	--	222	--	1,769
White pine							
Sawtimber	103,194	--	647	--	--	--	1,276
Poletimber	14,359	--	--	--	--	--	1,173
Sapling & seedling	2,589	--	--	--	--	281	918
All stands	120,142	--	647	--	--	281	3,367
Balsam fir							
Sawtimber	1,441	--	--	--	--	1,441	--
Poletimber	--	--	--	--	--	--	--
Sapling & seedling	7,690	--	--	267	--	2,154	--
All stands	9,131	--	--	267	--	3,595	--
White spruce							
Sawtimber	--	--	--	--	--	--	--
Poletimber	--	--	--	--	--	--	--
Sapling & seedling	152	--	--	--	--	--	--
All stands	152	--	--	--	--	--	--
Black spruce							
Sawtimber	--	--	--	--	--	--	--
Poletimber	--	--	--	--	--	--	--
Sapling & seedling	2,041	175	319	--	--	183	534
All stands	2,041	175	319	--	--	183	534
Northern white-cedar							
Sawtimber	2,042	--	--	--	--	--	--
Poletimber	30,067	--	--	--	--	--	--
Sapling & seedling	571	--	--	--	--	--	--
All stands	32,680	--	--	--	--	--	--

(Table 36 continued on next page)

(Table 36 continued)

Forest type and stand-size class	Basal-area class (square feet per acre)						
	71-80	81-90	91-100	101-120	121-150	151-180	181+
Jack pine							
Sawtimber	2,045	4,365	3,247	7,958	3,703	--	--
Poletimber	13,618	26,397	12,210	12,510	2,685	--	5,258
Sapling & seedling	12,191	--	--	--	--	--	--
All stands	27,854	30,762	15,457	20,468	6,388	--	5,258
Red pine							
Sawtimber	2,598	7,770	3,898	8,215	9,682	6,070	--
Poletimber	4,874	5,370	3,802	27,530	34,050	21,632	76,578
Sapling & seedling	2,472	1,531	--	1,969	--	--	--
All stands	9,944	14,671	7,700	37,714	43,732	27,702	76,578
White pine							
Sawtimber	8,319	9,167	6,915	37,569	33,220	6,081	--
Poletimber	--	1,628	--	2,620	--	8,938	--
Sapling & seedling	1,390	--	--	--	--	--	--
All stands	9,709	10,795	6,915	40,189	33,220	15,019	--
Balsam fir							
Sawtimber	--	--	--	--	--	--	--
Poletimber	--	--	--	--	--	--	--
Sapling & seedling	3,498	--	--	--	--	--	--
All stands	3,498	--	--	--	--	--	--
White spruce							
Sawtimber	--	--	--	--	--	--	--
Poletimber	--	--	--	--	--	--	--
Sapling & seedling	152	--	--	--	--	--	--
All stands	152	--	--	--	--	--	--
Black spruce							
Sawtimber	--	--	--	--	--	--	--
Poletimber	--	--	--	--	--	--	--
Sapling & seedling	--	--	--	830	--	--	--
All stands	--	--	--	830	--	--	--
Northern white-cedar							
Sawtimber	2,042	--	--	--	--	--	--
Poletimber	--	--	--	1,846	3,032	5,955	19,234
Sapling & seedling	--	--	--	571	--	--	--
All stands	2,042	--	--	2,417	3,032	5,955	19,234

(Table 36 continued on next page)

(Table 36 continued)

Forest type and stand-size class	All classes	Basal-area class (square feet per acre)					
		0-10	11-20	21-30	31-40	41-50	51-60
Tamarack							
Sawtimber	970	--	--	970	--	--	--
Poletimber	16,773	--	--	--	1,199	1,513	--
Sapling & seedling	3,516	115	259	--	--	2,025	1,117
All stands	21,259	115	259	970	1,199	3,538	--
Oak-hickory							
Sawtimber	463,999	--	--	1,203	840	13,017	19,397
Poletimber	391,293	--	--	--	2,793	1,076	30,349
Sapling & seedling	47,860	180	1,116	8,392	3,317	10,829	10,825
All stands	903,152	180	1,116	9,595	6,950	24,922	43,251
Elm-ash-soft maple							
Sawtimber	133,046	--	450	1,107	--	3,873	1,905
Poletimber	94,272	--	2,759	758	4,326	4,246	9,362
Sapling & seedling	23,905	247	1,411	1,077	3,793	2,356	7,636
All stands	251,223	247	4,620	2,942	8,119	10,475	13,133
Maple-birch							
Sawtimber	334,782	--	--	2,058	--	8,144	9,250
Poletimber	168,266	--	--	2,034	2,272	2,754	8,166
Sapling & seedling	60,580	378	2,033	4,612	4,450	6,910	6,452
All stands	563,628	378	2,033	8,704	6,722	17,808	16,703
Aspen							
Sawtimber	97,348	--	627	--	571	3,302	2,395
Poletimber	335,599	--	438	873	2,281	8,743	20,115
Sapling & seedling	73,354	500	5,949	4,165	9,877	20,442	8,414
All stands	506,301	500	7,014	5,038	12,729	32,487	41,464
Paper birch							
Sawtimber	15,915	--	--	--	--	--	6,299
Poletimber	57,134	--	--	--	--	2,300	2,874
Sapling & seedling	18,636	--	1,403	1,711	3,153	2,925	4,096
All stands	91,685	--	1,403	1,711	3,153	5,225	6,970
Exotic							
Sawtimber	--	--	--	--	--	--	--
Poletimber	--	--	--	--	--	--	--
Sapling & seedling	556	--	--	--	--	--	--
All stands	556	--	--	--	--	--	--
Nonstocked	5,173	426	1,332	--	395	--	--
All types							
Sawtimber	1,218,478	--	1,724	5,338	2,222	29,777	38,043
Poletimber	1,374,391	--	3,197	3,665	14,930	22,669	79,962
Sapling & seedling	270,823	1,747	13,152	21,097	25,287	49,307	41,785
Nonstocked	5,173	426	1,332	--	395	--	--
All stands	2,868,865	2,173	19,405	30,100	42,834	101,753	159,790
							139,184

(Table 36 continued on next page)

(Table 36 continued)

Forest type and stand-size class	Basal-area class (square feet per acre)						
	71-80	81-90	91-100	101-120	121-150	151-180	181+
Tamarack							
Sawtimber	--	--	--	--	--	--	--
Poletimber	--	7,440	6,621	--	--	--	--
Sapling & seedling	--	--	--	--	--	--	--
All stands	--	7,440	6,621	--	--	--	--
Oak-hickory							
Sawtimber	31,080	48,753	32,091	133,240	133,002	19,540	10,116
Poletimber	40,682	61,545	42,304	60,787	106,094	29,815	2,166
Sapling & seedling	3,186	1,388	778	--	--	--	--
All stands	74,948	111,686	75,173	194,027	239,096	49,355	12,282
Elm-ash-soft maple							
Sawtimber	10,324	10,319	24,685	18,205	38,608	19,177	--
Poletimber	9,657	13,166	1,615	17,451	7,368	10,072	6,851
Sapling & seedling	3,141	--	--	2,145	--	--	--
All stands	23,122	23,485	26,300	37,801	45,976	29,249	6,851
Maple-birch							
Sawtimber	24,631	48,660	23,445	57,713	101,193	42,323	14,636
Poletimber	13,583	9,541	22,269	32,673	50,038	5,366	10,360
Sapling & seedling	8,281	8,266	3,005	8,663	2,766	--	--
All stands	46,495	66,467	48,719	99,049	153,997	47,689	24,996
Aspen							
Sawtimber	7,971	9,786	9,868	33,210	11,080	16,361	--
Poletimber	32,820	49,098	18,476	92,799	53,745	22,090	7,038
Sapling & seedling	3,935	5,367	--	2,501	--	--	--
All stands	44,726	64,251	28,344	128,510	64,825	38,451	7,038
Paper birch							
Sawtimber	1,850	4,197	--	--	3,569	--	--
Poletimber	12,868	4,783	3,817	2,378	21,477	5,559	--
Sapling & seedling	--	3,294	--	2,054	--	--	--
All stands	14,718	12,274	3,817	4,432	25,046	5,559	--
Exotic							
Sawtimber	--	--	--	--	--	--	--
Poletimber	--	--	--	--	--	--	--
Sapling & seedling	556	--	--	--	--	--	--
All stands	556	--	--	--	--	--	--
Nonstocked	--	--	2,106	--	914	--	--
All types							
Sawtimber	90,860	143,017	104,149	296,110	334,057	109,552	24,752
Poletimber	128,102	178,968	111,114	250,594	278,489	109,427	127,485
Sapling & seedling	38,802	19,846	3,783	18,733	2,766	--	--
Nonstocked	--	--	2,106	--	914	--	--
All stands	257,764	341,831	221,152	565,437	616,226	218,979	152,237

Table 37.--Net volume of sawtimber on commercial forest land by forest type, stand-size class, and basal-area class, Central Unit, Wisconsin, 1983

(In thousand board feet)<sup>1/</sup>

Forest type and stand-size class	All classes	Basal-area class (square feet per acre)					
		0-10	11-20	21-30	31-40	41-50	51-60
Jack pine							
Sawtimber	108,506	--	--	--	2,460	--	14,224
Poletimber	144,537	--	--	--	--	2,193	9,015
Sapling & seedling	23,496	--	1,677	--	--	4,324	368
All stands	276,539	--	1,677	--	2,460	6,517	23,607
Red pine							
Sawtimber	159,013	--	--	--	--	--	--
Poletimber	73,412	--	--	--	--	--	5,614
Sapling & seedling	17,231	790	--	--	1,282	--	--
All stands	249,656	790	--	--	1,282	--	5,614
White pine							
Sawtimber	422,103	--	3,600	--	--	--	7,384
Poletimber	15,162	--	--	--	--	--	2,120
Sapling & seedling	2,520	--	--	--	--	--	2,520
All stands	439,785	--	3,600	--	--	--	12,024
Balsam fir							
Sawtimber	3,173	--	--	--	--	3,173	--
Poletimber	--	--	--	--	--	--	--
Sapling & seedling	17,966	--	--	855	--	10,797	--
All stands	21,139	--	--	855	--	13,970	--
White spruce							
Sawtimber	--	--	--	--	--	--	--
Poletimber	--	--	--	--	--	--	--
Sapling & seedling	--	--	--	--	--	--	--
All stands	--	--	--	--	--	--	--
Black spruce							
Sawtimber	--	--	--	--	--	--	--
Poletimber	--	--	--	--	--	--	--
Sapling & seedling	--	--	--	--	--	--	--
All stands	--	--	--	--	--	--	--
Northern white-cedar							
Sawtimber	5,678	--	--	--	--	--	--
Poletimber	37,830	--	--	--	--	--	--
Sapling & seedling	--	--	--	--	--	--	--
All stands	43,508	--	--	--	--	--	--

<sup>1/</sup>International 1/4-inch rule.

(Table 37 continued on next page)

(Table 37 continued)

Forest type and stand-size class	Basal-area class (square feet per acre)						
	71-80	81-90	91-100	101-120	121-150	151-180	181+
Jack pine							
Sawtimber	9,029	14,407	12,072	31,410	18,075	--	--
Poletimber	23,678	42,345	21,095	27,587	4,749	--	4,235
Sapling & seedling	6,933	--	--	--	--	--	--
All stands	39,640	56,752	33,167	58,997	22,824	--	4,235
Red pine							
Sawtimber	10,897	32,416	10,387	38,079	44,944	22,290	--
Poletimber	--	--	--	7,411	16,371	3,754	40,262
Sapling & seedling	4,017	4,016	--	7,126	--	--	--
All stands	14,914	36,432	10,387	52,616	61,315	26,044	40,262
White pine							
Sawtimber	40,761	37,068	24,797	166,133	122,862	19,498	--
Poletimber	--	1,772	--	1,814	--	9,456	--
Sapling & seedling	--	--	--	--	--	--	--
All stands	40,761	38,840	24,797	167,947	122,862	28,954	--
Balsam fir							
Sawtimber	--	--	--	--	--	--	--
Poletimber	--	--	--	--	--	--	--
Sapling & seedling	5,464	--	--	--	--	--	--
All stands	5,464	--	--	--	--	--	--
White spruce							
Sawtimber	--	--	--	--	--	--	--
Poletimber	--	--	--	--	--	--	--
Sapling & seedling	--	--	--	--	--	--	--
All stands	--	--	--	--	--	--	--
Black spruce							
Sawtimber	--	--	--	--	--	--	--
Poletimber	--	--	--	--	--	--	--
Sapling & seedling	--	--	--	--	--	--	--
All stands	--	--	--	--	--	--	--
Northern white-cedar							
Sawtimber	5,678	--	--	--	--	--	--
Poletimber	--	--	--	2,218	2,310	10,944	22,358
Sapling & seedling	--	--	--	--	--	--	--
All stands	5,678	--	--	2,218	2,310	10,944	22,358

(Table 37 continued on next page)

(Table 37 continued)

Forest type and stand-size class	All classes	Basal-area class (square feet per acre)						
		0-10	11-20	21-30	31-40	41-50	51-60	61-70
Tamarack								
Sawtimber	4,318	--	--	4,318	--	--	--	--
Poletimber	11,026	--	--	--	--	--	--	--
Sapling & seedling	4,687	766	--	--	--	3,921	--	--
All stands	20,031	766	--	4,318	--	3,921	--	--
Oak-hickory								
Sawtimber	1,624,490	--	--	6,265	3,016	49,526	75,274	75,328
Poletimber	547,769	--	--	--	4,423	1,321	46,669	24,440
Sapling & seedling	106,746	--	2,437	19,362	10,643	16,555	20,601	25,350
All stands	2,279,005	--	2,437	25,627	18,082	67,402	142,544	125,118
Elm-ash-soft maple								
Sawtimber	455,605	--	1,422	5,868	--	19,261	6,022	20,483
Poletimber	126,268	--	--	1,657	7,498	1,700	14,630	10,551
Sapling & seedling	36,939	547	1,686	3,220	3,766	1,604	12,094	2,751
All stands	618,812	547	3,108	10,745	11,264	22,565	32,746	33,785
Maple-birch								
Sawtimber	1,156,430	--	--	7,778	--	27,924	29,011	9,913
Poletimber	271,922	--	--	2,183	4,731	2,081	15,137	19,077
Sapling & seedling	131,995	1,381	2,178	7,479	11,777	19,661	10,154	4,433
All stands	1,560,347	1,381	2,178	17,440	16,508	49,666	54,302	33,423
Aspen								
Sawtimber	267,209	--	2,559	--	1,997	11,236	9,320	9,471
Poletimber	286,712	--	--	695	1,397	8,863	22,333	27,997
Sapling & seedling	69,727	1,091	16,970	878	5,729	15,775	9,403	11,904
All stands	623,648	1,091	19,529	1,573	9,123	35,874	41,056	49,372
Paper birch								
Sawtimber	52,783	--	--	--	--	--	--	23,043
Poletimber	77,483	--	--	--	--	1,908	1,474	--
Sapling & seedling	23,925	--	2,597	851	1,705	5,530	6,979	--
All stands	154,191	--	2,597	851	1,705	7,438	8,453	23,043
Exotic								
Sawtimber	--	--	--	--	--	--	--	--
Poletimber	--	--	--	--	--	--	--	--
Sapling & seedling	--	--	--	--	--	--	--	--
All stands	--	--	--	--	--	--	--	--
Nonstocked	9,075	2,340	2,191	--	1,863	--	--	--
All types								
Sawtimber	4,259,308	--	7,581	24,229	7,473	111,120	141,235	145,067
Poletimber	1,592,121	--	--	4,535	18,049	18,066	111,378	97,319
Sapling & seedling	435,232	4,575	27,545	32,645	34,902	78,167	62,119	55,482
Nonstocked	9,075	2,340	2,191	--	1,863	--	--	--
All stands	6,295,736	6,915	37,317	61,409	62,287	207,353	314,732	297,868

(Table 37 continued on next page)

(Table 37 continued)

Forest type and stand-size class	Basal-area class (square feet per acre)						
	71-80	81-90	91-100	101-120	121-150	151-180	181+
Tamarack							
Sawtimber	--	--	--	--	--	--	--
Poletimber	--	6,123	4,903	--	--	--	--
Sapling & seedling	--	--	--	--	--	--	--
All stands	--	6,123	4,903	--	--	--	--
Oak-hickory							
Sawtimber	105,029	173,870	117,689	476,115	452,297	62,415	27,666
Poletimber	41,926	87,218	64,067	92,750	153,371	30,489	1,095
Sapling & seedling	2,231	5,491	4,076	--	--	--	--
All stands	149,186	266,579	185,832	568,865	605,668	92,904	28,761
Elm-ash-soft maple							
Sawtimber	42,306	34,147	80,242	53,500	139,974	52,380	--
Poletimber	15,926	19,024	845	26,024	13,357	4,789	10,267
Sapling & seedling	2,283	--	8,988	--	--	--	--
All stands	60,515	53,171	81,087	88,512	153,331	57,169	10,267
Maple-birch							
Sawtimber	88,852	186,657	76,894	193,944	346,741	138,999	49,717
Poletimber	26,442	24,388	27,319	46,111	84,753	3,608	16,092
Sapling & seedling	7,024	26,768	6,699	27,933	6,508	--	--
All stands	122,318	237,813	110,912	267,988	438,002	142,607	65,809
Aspen							
Sawtimber	23,632	28,826	23,025	96,314	27,268	33,561	--
Poletimber	27,652	58,117	12,942	62,442	48,773	10,653	4,848
Sapling & seedling	--	6,731	--	1,246	--	--	--
All stands	51,284	93,674	35,967	160,002	76,041	44,214	4,848
Paper birch							
Sawtimber	5,150	11,190	--	--	13,400	--	--
Poletimber	16,530	11,484	1,172	3,912	34,930	6,073	--
Sapling & seedling	--	6,263	--	--	--	--	--
All stands	21,680	28,937	1,172	3,912	48,330	6,073	--
Exotic							
Sawtimber	--	--	--	--	--	--	--
Poletimber	--	--	--	--	--	--	--
Sapling & seedling	--	--	--	--	--	--	--
All stands	--	--	--	--	--	--	--
Nonstocked	--	--	2,681	--	--	--	--
All types							
Sawtimber	331,334	518,581	345,106	1,055,495	1,165,561	329,143	77,383
Poletimber	152,154	250,471	132,343	270,269	358,614	79,766	99,157
Sapling & seedling	27,952	49,269	10,775	45,293	6,508	--	--
Nonstocked	--	--	2,681	--	--	--	--
All stands	511,440	818,321	490,905	1,371,057	1,530,683	408,909	176,540

Table 38.--Net volume of sawtimber on commercial forest land by species group and butt log grade, Central Unit, Wisconsin, 1983

(In thousand board feet)<sup>1/</sup>

Species group	All grades	Log grade			
		1	2	3	Tie and timber
<b>Softwoods</b>					
Jack pine	416,129	10,013	31,227	374,889	--
Red pine	325,587	69,624	21,801	234,162	--
White pine	772,302	43,123	150,740	407,436	171,003
White spruce	3,147	--	--	3,147	--
Black spruce	3,038	--	--	3,038	--
Balsam fir	18,838	--	--	18,838	--
Hemlock	88,210	--	--	88,210	--
Tamarack	34,873	--	--	34,873	--
Eastern redcedar	1,272	--	--	1,272	--
Northern white-cedar	40,436	--	--	40,436	--
Other softwoods	6,238	--	--	6,238	--
<b>Total</b>	<b>1,710,070</b>	<b>122,760</b>	<b>203,768</b>	<b>1,212,539</b>	<b>171,003</b>
<b>Hardwoods</b>					
White oak	472,657	17,146	99,478	281,788	74,245
Select red oak	1,106,582	228,337	382,697	455,855	39,693
Other red oak	772,840	25,997	87,439	431,183	228,221
Select hickory	13,982	--	--	13,982	--
Other hickory	19,733	--	--	19,733	--
Basswood	213,198	42,647	29,665	140,886	--
Beech	4,749	--	--	4,749	--
Yellow birch	54,922	--	11,540	37,510	5,874
Hard maple	341,476	45,170	122,460	148,122	25,724
Soft maple	563,439	50,270	127,922	374,289	10,958
Elm	109,512	--	49,306	28,138	32,068
Black ash	100,226	25,210	48,126	26,890	--
White & green ash	96,736	48,662	21,278	20,637	6,161
Cottonwood	10,173	--	--	10,173	--
Willow	10,825	--	8,623	2,202	--
Hackberry	--	--	--	--	--
Balsam poplar	--	--	--	--	--
Bigtooth aspen	266,184	17,801	103,607	140,464	4,310
Quaking aspen	328,348	--	61,978	241,880	24,488
Paper birch	55,304	--	--	55,304	--
River birch	5,566	--	--	5,566	--
Black cherry	10,963	--	--	10,963	--
Black walnut	1,275	--	--	1,275	--
Butternut	21,233	--	21,233	--	--
Other hardwoods	5,743	--	--	5,743	--
<b>Total</b>	<b>4,585,666</b>	<b>501,240</b>	<b>1,175,352</b>	<b>2,457,332</b>	<b>451,742</b>
<b>All species</b>	<b>6,295,736</b>	<b>624,000</b>	<b>1,379,120</b>	<b>3,669,871</b>	<b>622,745</b>

Table 39.--Net volume of short-log trees on commercial forest land by species group and diameter class, Central Unit, Wisconsin, 1983  
(In thousand cubic feet)

Species group	All classes	Diameter class (inches at breast height)									
		9.0-10.9	11.0-12.9	13.0-14.9	15.0-16.9	17.0-18.9	19.0-20.9	21.0-22.9	23.0-28.9	29.0-38.9	39.0+
Softwoods											
Jack pine	1,961	1,038	719	204	--	--	--	--	--	--	--
Red pine	137	137	--	--	--	--	--	--	--	--	--
White pine	6,945	2,077	1,027	226	377	808	353	906	882	319	--
White spruce	--	--	--	--	--	--	--	--	--	--	--
Black spruce	--	--	--	--	--	--	--	--	--	--	--
Balsam fir	--	--	--	--	--	--	--	--	--	--	--
Hemlock	641	--	316	179	--	--	--	--	--	--	--
Tamarack	191	--	--	191	--	--	--	146	--	--	--
Eastern redcedar	--	--	--	--	--	--	--	--	--	--	--
Northern white-cedar	415	130	285	--	--	--	--	--	--	--	--
Other softwoods	364	364	--	--	--	--	--	--	--	--	--
Total	10,654	3,746	2,347	800	377	808	499	906	852	319	--
Hardwoods											
White oak	13,077	--	1,912	3,050	2,060	2,571	1,268	350	1,300	--	566
Select red oak	14,390	--	563	3,766	2,265	2,004	1,845	1,531	1,743	673	--
Other red oak	32,019	--	4,088	8,746	7,866	5,547	1,835	1,544	1,773	--	--
Select hickory	429	--	247	--	182	--	--	--	--	--	--
Other hickory	402	--	151	251	--	--	--	--	--	--	--
Basswood	1,704	--	--	512	238	259	252	237	--	206	--
Beech	--	--	--	--	--	--	--	--	--	--	--
Yellow birch	1,527	--	317	802	202	206	--	--	--	--	--
Hard maple	6,855	--	349	1,080	1,599	1,306	911	668	715	227	--
Soft maple	12,678	--	1,216	1,814	2,446	1,213	1,451	1,586	1,343	1,033	576
Elm	1,822	--	--	280	659	--	--	448	211	224	--
Black ash	542	--	--	--	542	--	--	--	--	--	--
White & green ash	954	--	234	227	254	239	--	--	--	--	--
Cottonwood	188	--	--	--	--	--	--	188	--	--	--
Willow	214	--	--	--	--	--	--	--	--	214	--
Hackberry	--	--	--	--	--	--	--	--	--	--	--
Balsam poplar	--	--	--	--	--	--	--	--	--	--	--
Bigtooth aspen	1,187	--	205	256	505	--	--	221	--	--	--
Quaking aspen	1,408	--	721	464	223	--	--	--	--	--	--
Paper birch	798	--	173	441	184	--	--	--	--	--	--
River birch	--	--	--	--	--	--	--	--	--	--	--
Black cherry	357	--	146	--	211	--	--	--	--	--	--
Black walnut	--	--	--	--	--	--	--	--	--	--	--
Butternut	768	--	398	199	171	--	--	--	--	--	--
Other hardwoods	458	--	236	97	125	--	--	--	--	--	--
Total	91,777	--	11,576	21,985	19,732	13,345	7,971	6,364	7,299	2,363	1,142
All species	102,431	3,746	13,923	22,785	20,109	14,153	8,470	7,270	8,151	2,682	1,142

Table 40.--Net volume of short-log trees on commercial forest land by species group and diameter class, Central Unit, Wisconsin, 1983  
(In thousand board feet)<sup>1/</sup>

Species group	All classes	Diameter class (inches at breast height)						
		9.0	11.0-	13.0-	15.0-	17.0-	19.0-	21.0-
10.9	12.9	14.9	16.9	18.9	20.9	22.9	23.0-	38.9
Softwoods								39.0+
Jack pine	6,797	3,599	2,493	705	--	--	--	--
Red pine	572	572	--	--	--	--	--	--
White pine	--	--	--	--	--	--	--	--
White spruce	--	--	--	--	--	--	--	--
Black spruce	--	--	--	--	--	--	--	--
Balsam fir	22,856	5,440	3,040	754	1,330	2,931	1,315	--
Hemlock	1,569	--	733	444	--	--	3,433	3,312
Tamarack	835	--	--	835	--	--	--	--
Eastern redcedar	1,410	423	987	--	--	--	--	--
Northern white-cedar	1,820	1,820	--	--	--	--	--	--
Other softwoods								
Total	35,859	11,854	7,253	2,738	1,330	2,931	1,707	3,433
Hardwoods								1,301
White oak	34,629	--	5,495	8,295	5,374	6,615	3,205	876
Select red oak	32,384	--	1,246	8,331	5,104	4,461	4,132	3,309
Other red oak	73,144	--	10,734	19,910	17,854	12,652	4,256	4,031
Select hickory	1,247	--	769	--	478	--	4,583	4,155
Other hickory	1,086	--	435	651	--	--	--	--
Basswood	3,705	--	--	1,104	513	557	543	520
Beech	3,408	--	652	1,774	470	512	--	--
Yellow birch	16,819	--	840	2,541	3,839	3,205	2,268	1,689
Hard maple	33,390	--	3,646	5,003	6,491	3,102	3,712	4,007
Soft maple	4,664	--	--	662	1,650	--	1,173	561
Elm	1,386	--	--	--	1,386	--	--	--
Black ash	2,237	--	582	556	565	534	--	--
White & green ash	574	--	--	--	--	--	574	--
Cottonwood	692	--	--	--	--	--	--	692
Willow	--	--	--	--	--	--	--	--
Huckleberry	--	--	--	--	--	--	--	--
Balsam poplar	--	--	--	--	--	--	--	--
Bigtooth aspen	1,935	--	320	402	833	--	380	--
Quaking aspen	3,150	--	1,533	1,078	539	--	--	--
Paper birch	2,209	--	481	1,202	526	--	--	--
River birch	--	--	--	--	--	--	--	--
Black cherry	1,036	--	454	--	582	--	--	--
Black walnut	--	--	--	--	--	--	--	--
Butternut	2,108	--	1,118	543	447	--	--	--
Other hardwoods	1,631	--	825	363	443	--	--	--
Total	221,434	--	29,130	52,415	47,094	31,638	19,070	16,328
All species	257,293	11,854	36,383	55,153	48,424	34,569	20,777	18,761
								21,298
								7,159
								2,915

<sup>1/</sup>International 1/4-inch rule.

Table 41.--Net annual growth of growing stock on commercial forest land by softwoods and hardwoods, Central Unit, Wisconsin, 1967 and 1982

(In thousand cubic feet)

Species	1967 <sup>1/</sup>	1982
Softwoods	21,400	32,720
Hardwoods	50,600	67,456
All species	72,000	100,176

<sup>1/</sup>Figures have been adjusted from those published after the 1968 survey to conform to 1982 volumes because of changes in survey procedures.

Table 42.--Net annual growth of growing stock on commercial forest land by species group and county, Central Unit, Wisconsin, 1982  
(In thousand cubic feet)

Species group	All Counties	County									Waupaca	Waushara	Wood
		Adams	Chippewa	Clark	Eau Claire	Jackson	Juneau	Marathon	Marquette	Monroe	Portage		
Softwoods													
Jack pine	8,124	1,241	86	256	310	2,380	2,193	11	93	529	216	--	386
Red pine	15,411	2,790	104	395	1,463	2,130	1,307	509	885	217	1,802	1,320	2,445
White pine	6,226	546	266	351	218	750	379	554	465	436	489	582	685
White spruce	37	--	6	--	--	--	--	14	--	--	--	7	--
Black spruce	305	--	86	117	--	--	--	40	--	--	22	19	--
Balsam fir	773	--	-7	--	--	--	--	401	--	--	60	319	--
Hemlock	375	--	2	--	--	--	--	213	--	--	55	100	--
Tamarack	240	9	26	--	--	47	-3	8	63	-41	21	118	-8
Eastern redcedar	21	--	--	--	--	8	6	--	7	--	--	--	--
Northern white-cedar	1,068	--	--	--	--	--	--	195	--	--	414	383	76
Other softwoods	140	--	--	--	--	20	--	--	58	--	--	--	62
Total	32,720	4,586	569	1,119	1,991	5,335	3,882	1,945	1,571	1,141	3,079	2,848	3,646
Hardwoods													
White oak	2,950	98	243	592	205	426	204	44	229	169	164	122	260
Select red oak	8,337	214	562	1,257	358	1,563	633	976	98	1,279	295	487	129
Other red oak	10,830	1,686	156	214	1,215	2,027	1,676	13	294	1,091	644	389	995
Select hickory	113	--	--	--	--	17	4	--	8	45	--	2	37
Other hickory	285	--	97	15	--	--	7	53	--	7	34	72	--
Basswood	2,344	25	428	395	102	106	1	837	31	35	132	130	6
Beech	7	--	--	--	--	--	--	--	--	--	7	--	--
Yellow birch	454	--	37	17	--	--	--	321	--	--	8	42	--
Hard maple	3,318	--	598	241	29	--	47	1,813	--	72	151	267	--
Soft maple	12,334	218	1,125	2,324	710	1,983	605	2,040	81	562	485	1,094	215
Elm	-1,059	-8	-60	-135	-77	51	-19	-411	-36	-46	-28	-272	28
Black ash	2,080	18	527	394	19	--	8	389	25	75	209	311	28
White & green ash	1,837	--	240	217	8	8	16	544	222	193	29	250	72
Cottonwood	38	1	--	--	10	--	--	4	13	--	--	10	--
Willow	17	38	--	--	--	-24	14	--	12	--	--	-23	--
Blackberry	--	--	--	--	--	--	--	--	--	--	--	--	--
Balsam poplar	-4	--	--	--	--	--	--	--	--	--	--	--	-4
Bigtooth aspen	4,296	102	614	789	169	702	198	653	--	282	124	165	216
Quaking aspen	13,046	486	1,232	2,759	939	990	1,098	1,767	109	178	698	304	282
Paper birch	5,352	42	681	529	373	473	235	1,526	14	667	105	389	164
River birch	-12	--	--	31	21	-80	--	--	--	--	--	--	16
Black cherry	581	19	15	66	66	72	28	47	3	74	101	52	29
Black walnut	6	--	--	--	--	--	6	--	--	--	--	--	9
Butternut	86	--	6	17	--	--	21	10	--	-5	--	31	6
Other hardwoods	220	--	--	--	--	8	--	--	4	--	--	64	144
Total	67,456	2,939	6,501	9,691	4,147	7,933	4,700	10,622	1,098	4,691	3,151	3,883	2,323
All species	100,176	7,525	7,070	10,810	6,138	13,268	8,582	12,567	2,669	5,832	6,230	6,731	5,777
												5,969	6,785

Table 43.—Net annual growth of sawtimber on commercial forest land by species group and county, Central Unit, Wisconsin, 1982  
(In thousand board feet)<sup>1/</sup>

Species group	All counties	County												
		Adams	Chippewa	Clark	Eau Claire	Jackson	Juneau	Marathon	Marquette	Monroe	Portage	Waupaca	Wauashara	Wood
Softwoods														
Jack pine	23,196	4,201	38	644	1,131	5,316	4,809	102	977	2,001	262	7,163	1,090	2,625
Red pine	27,575	3,124	737	2,627	595	3,078	4,525	503	183	2,058	2,730	2,946	2,730	252
White pine	29,065	1,901	1,399	2,073	1,618	3,078	1,354	2,435	1,991	2,532	2,197	2,957	2,957	2,584
White spruce	157	--	86	--	--	--	--	71	--	--	--	--	--	--
Black spruce	148	--	--	--	--	--	--	30	--	--	--	118	--	--
Balsam fir	1,129	--	--	--	--	--	--	630	--	--	--	499	--	--
Hemlock	1,289	--	--	--	--	--	--	770	--	--	--	477	--	24
Tamarack	874	52	--	--	--	--	--	19	279	--	--	84	268	172
Eastern redcedar	85	--	--	--	--	85	--	--	--	--	--	--	--	--
Northern white-cedar	1,476	--	--	--	--	--	--	401	--	--	--	374	655	46
Other softwoods	314	--	--	--	--	--	197	--	--	59	--	--	58	--
Total	85,308	9,278	2,260	5,344	3,344	11,754	10,688	4,961	3,306	4,716	4,993	12,126	7,053	5,485
Hardwoods														
White oak	13,744	359	935	2,122	1,568	1,206	2,117	151	1,205	813	584	480	698	1,506
Select red oak	38,379	570	3,065	4,262	1,688	6,430	3,999	3,281	401	6,616	1,547	2,826	472	3,222
Other red oak	36,212	6,983	1,806	260	2,710	7,520	3,993	115	1,370	2,855	2,110	1,748	3,648	1,894
Select hickory	251	--	--	--	114	13	--	24	72	--	9	19	--	--
Other hickory	820	--	213	98	--	--	297	--	14	125	73	--	--	--
Basswood	7,683	79	2,445	1,286	241	--	46	1,739	200	68	176	983	27	393
Beech	1,198	--	--	--	--	--	--	--	--	--	1,198	--	--	--
Yellow birch	1,981	--	46	--	--	--	1,547	--	--	--	172	--	--	216
Hard maple	11,491	--	772	790	-54	--	292	6,840	--	137	98	2,438	--	178
Soft maple	21,042	290	2,537	1,977	564	1,921	1,432	4,683	304	1,000	1,267	2,720	781	1,566
Elm	-2,676	-38	-220	-502	-318	-579	654	-1,133	-90	-340	-352	-809	-7	-100
Black ash	5,536	124	1,664	499	--	--	176	43	192	687	625	1,101	93	332
White & green ash	4,896	--	437	110	--	33	107	841	95	67	288	1,704	43	1,171
Cottonwood	140	6	--	--	--	49	3	--	18	19	--	--	45	--
Willow	-26	103	--	--	--	-96	--	--	53	--	--	-86	--	--
Hackberry	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Balsam poplar	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Bigtooth aspen	12,694	213	2,137	2,211	974	1,534	676	1,580	--	786	1,040	597	640	306
Quaking aspen	22,119	501	2,759	6,104	1,669	1,326	934	4,721	833	648	694	93	9	1,828
Paper birch	3,406	--	537	285	16	88	94	171	--	377	1,171	264	187	216
River birch	17	--	--	--	119	57	-161	--	--	--	--	--	2	--
Black cherry	379	34	--	--	--	--	19	227	--	3	96	--	--	--
Black walnut	25	--	--	--	--	--	25	--	--	102	--	305	1,056	--
Butternut	1,682	--	26	164	--	--	13	16	--	--	--	884	--	--
Other hardwoods	884	--	--	--	--	--	--	--	--	--	--	--	--	--
Total	181,877	9,224	18,359	19,666	9,177	20,761	14,432	25,119	4,605	13,924	9,469	16,700	7,711	12,730
All species	267,185	18,502	20,619	25,010	12,521	32,515	25,120	30,080	7,911	18,640	14,462	28,826	14,764	18,215

<sup>1/</sup> International 1/4-inch rule.

Table 44.--Net annual growth of growing stock on commercial forest land by ownership class and softwoods and hardwoods, Central Unit, Wisconsin, 1982

Ownership class	Growing stock			Sawtimber		
	All species	Softwoods	Hardwoods	All species	Softwoods	Hardwoods
- - - Thousand cubic feet - - -						
National Forest	--	--	--	--	--	--
Miscellaneous federal	3,644	1,469	2,175	9,089	5,345	3,744
State	3,102	1,413	1,689	7,062	4,206	2,856
County and municipal	13,079	3,010	10,069	26,417	9,148	17,269
Indian	241	96	145	541	541	--
Forest industry	5,095	2,266	2,829	12,444	2,676	9,768
Farmer	31,332	7,127	24,205	95,035	22,363	72,672
Misc. private-corp.	4,342	2,176	2,166	9,614	3,118	6,496
Misc. private-indiv.	39,341	15,163	24,178	106,983	37,911	69,072
All owners	100,176	32,720	67,456	267,185	85,308	181,877

<sup>1/</sup> International 1/4-inch rule.

Table 45.--Net annual growth of growing stock on commercial forest land by species group and forest type, Central Unit, Wisconsin, 1982

(In thousand cubic feet)

Species group	Forest type								
	All types	Jack pine	Red pine	White pine	Balsam fir	White spruce	Black spruce	Northern white-cedar	Tamarack
<b>Softwoods</b>									
Jack pine	8,124	5,511	206	230	--	--	--	--	--
Red pine	15,411	763	13,240	584	26	--	--	--	--
White pine	6,226	110	426	2,813	84	--	--	14	49
White spruce	37	--	7	--	--	10	--	--	--
Black spruce	305	--	19	--	--	--	142	13	--
Balsam fir	773	--	--	--	231	--	--	153	--
Hemlock	375	--	--	--	--	--	--	-5	--
Tamarack	240	--	--	15	--	--	2	-12	334
Eastern redcedar	21	8	--	--	--	--	--	--	--
Northern white-cedar	1,068	--	--	--	--	--	--	762	13
Other softwoods	140	--	82	--	--	--	--	--	--
<b>Total</b>	<b>32,720</b>	<b>6,392</b>	<b>13,980</b>	<b>3,642</b>	<b>341</b>	<b>10</b>	<b>144</b>	<b>925</b>	<b>396</b>
<b>Hardwoods</b>									
White oak	2,950	8	10	43	--	--	--	--	--
Select red oak	8,337	15	11	20	6	--	--	2	--
Other red oak	10,830	461	121	194	--	--	--	2	--
Select hickory	113	--	--	22	--	--	--	--	--
Other hickory	285	--	--	--	--	--	--	--	--
Basswood	2,344	--	2	--	4	--	--	3	--
Beech	7	--	-3	--	--	--	--	--	--
Yellow birch	454	--	--	-11	--	--	--	-2	5
Hard maple	3,318	--	8	23	--	--	--	--	--
Soft maple	12,334	--	1	251	8	--	--	-2	24
Elm	-1,059	--	--	-23	8	--	--	-17	5
Black ash	2,080	--	--	14	13	--	--	9	--
White & green ash	1,837	--	9	--	--	--	--	--	--
Cottonwood	38	9	--	--	--	--	--	--	--
Willow	17	--	--	--	--	--	--	--	--
Hackberry	--	--	--	--	--	--	--	--	--
Balsam poplar	-4	--	--	--	--	--	--	--	--
Bigtooth aspen	4,296	38	-8	125	--	--	--	--	14
Quaking aspen	13,046	95	2	743	--	--	--	-47	194
Paper birch	5,352	12	--	47	18	--	--	12	18
River birch	-12	--	--	--	--	--	--	--	--
Black cherry	581	--	--	66	--	--	--	--	--
Black walnut	6	--	--	--	--	--	--	--	--
Butternut	86	--	--	--	--	--	--	--	--
Other hardwoods	220	--	--	--	--	--	--	--	--
<b>Total</b>	<b>67,456</b>	<b>638</b>	<b>153</b>	<b>1,514</b>	<b>57</b>	<b>--</b>	<b>--</b>	<b>-40</b>	<b>260</b>
<b>All species</b>	<b>100,176</b>	<b>7,030</b>	<b>14,133</b>	<b>5,156</b>	<b>398</b>	<b>10</b>	<b>144</b>	<b>885</b>	<b>656</b>

(Table 45 continued on next page)

(Table 45 continued)

Species group	Forest type						
	Oak-hickory	Elm-ash-soft maple	Maple-birch	Aspen	Paper birch	Exotic	Non-stocked
<b>Softwoods</b>							
Jack pine	1,378	-2	210	534	53	--	4
Red pine	219	13	410	72	84	--	--
White pine	975	379	1,003	193	180	--	--
White spruce	--	14	6	--	--	--	--
Black spruce	--	19	5	107	--	--	--
Balsam fir	26	69	257	25	12	--	--
Hemlock	5	55	308	12	--	--	--
Tamarack	--	-115	--	11	-12	--	17
Eastern redcedar	13	--	--	--	--	--	--
Northern white-cedar	9	107	123	--	54	--	--
Other softwoods	20	--	--	--	--	38	--
<b>Total</b>	<b>2,645</b>	<b>539</b>	<b>2,322</b>	<b>954</b>	<b>371</b>	<b>38</b>	<b>21</b>
<b>Hardwoods</b>							
White oak	2,056	155	332	215	123	--	8
Select red oak	6,002	165	1,256	727	129	--	4
Other red oak	8,573	166	439	792	27	--	55
Select hickory	71	2	--	--	18	--	--
Other hickory	94	--	130	61	--	--	--
Basswood	209	517	1,491	84	17	--	17
Beech	--	--	10	--	--	--	--
Yellow birch	16	71	373	-4	6	--	--
Hard maple	250	18	2,703	267	49	--	--
Soft maple	1,916	3,593	3,415	2,916	212	--	--
Elm	-54	-597	-334	-57	49	--	-39
Black ash	38	1,436	185	314	52	--	19
White & green ash	350	255	1,142	60	21	--	--
Cottonwood	19	--	1	5	4	--	--
Willow	--	-60	12	52	13	--	--
Hackberry	--	--	--	--	--	--	--
Balsam poplar	--	--	--	-4	--	--	--
Bigtooth aspen	1,061	2	558	2,347	159	--	--
Quaking aspen	822	544	890	8,883	918	--	2
Paper birch	1,075	213	745	1,279	1,919	--	14
River birch	-2	-10	--	--	--	--	--
Black cherry	239	47	154	56	19	--	--
Black walnut	--	--	6	--	--	--	--
Butternut	44	--	25	7	10	--	--
Other hardwoods	13	64	4	139	--	--	--
<b>Total</b>	<b>22,792</b>	<b>6,581</b>	<b>13,537</b>	<b>18,139</b>	<b>3,745</b>	<b>--</b>	<b>80</b>
<b>All species</b>	<b>25,437</b>	<b>7,120</b>	<b>15,859</b>	<b>19,093</b>	<b>4,116</b>	<b>38</b>	<b>101</b>

Table 46.--Net annual growth of sawtimber on commercial forest land by species group and forest type,  
Central Unit, Wisconsin, 1982

(In thousand board feet)<sup>1/</sup>

Species group	All types	Forest type							Northern white-cedar	Tamarack
		Jack pine	Red pine	White pine	Balsam fir	White spruce	Black spruce			
<b>Softwoods</b>										
Jack pine	23,196	13,990	652	364	--	--	--	--	--	--
Red pine	27,575	1,002	23,223	1,211	148	--	--	--	--	--
White pine	29,065	749	775	12,967	492	--	--	--	34	229
White spruce	157	--	--	--	--	--	--	--	--	--
Black spruce	148	--	--	--	--	--	--	--	--	--
Balsam fir	1,129	--	--	--	291	--	--	--	152	--
Hemlock	1,289	--	--	--	--	--	--	--	-18	--
Tamarack	874	--	--	140	--	--	--	--	-2	562
Eastern redcedar	85	85	--	--	--	--	--	--	--	--
Northern white-cedar	1,476	--	--	--	--	--	--	--	859	--
Other softwoods	314	--	314	--	--	--	--	--	--	--
<b>Total</b>	<b>85,308</b>	<b>15,826</b>	<b>24,964</b>	<b>14,682</b>	<b>931</b>	<b>--</b>	<b>--</b>	<b>--</b>	<b>1,025</b>	<b>791</b>
<b>Hardwoods</b>										
White oak	13,744	--	96	115	--	--	--	--	--	--
Select red oak	38,379	173	-16	72	28	--	--	--	12	--
Other red oak	36,212	649	364	536	--	--	--	--	10	--
Select hickory	251	--	--	--	--	--	--	--	--	--
Other hickory	820	--	--	--	--	--	--	--	--	--
Basswood	7,683	--	12	--	23	--	--	--	15	--
Beech	1,198	--	1,079	--	--	--	--	--	--	--
Yellow birch	1,981	--	--	-80	--	--	--	--	--	--
Hard maple	11,491	--	890	156	--	--	--	--	--	--
Soft maple	21,042	--	1	147	--	--	--	--	9	11
Elm	-2,676	--	--	-68	--	--	--	--	-49	--
Black ash	5,536	--	--	149	93	--	--	--	71	--
White & green ash	4,896	--	37	--	--	--	--	--	--	--
Cottonwood	140	--	--	--	--	--	--	--	--	--
Willow	-26	--	--	--	--	--	--	--	--	--
Hackberry	--	--	--	--	--	--	--	--	--	--
Balsam poplar	--	--	--	--	--	--	--	--	--	--
Bigtooth aspen	12,694	53	--	-43	--	--	--	--	--	33
Quaking aspen	22,119	--	--	18	--	--	--	--	-15	--
Paper birch	3,406	--	--	-58	--	--	--	--	5	--
River birch	17	--	--	--	--	--	--	--	--	--
Black cherry	379	--	--	--	--	--	--	--	--	--
Black walnut	25	--	--	--	--	--	--	--	--	--
Butternut	1,682	--	--	--	--	--	--	--	--	--
Other hardwoods	884	--	--	--	--	--	--	--	--	--
<b>Total</b>	<b>181,877</b>	<b>875</b>	<b>2,463</b>	<b>944</b>	<b>144</b>	<b>--</b>	<b>--</b>	<b>--</b>	<b>58</b>	<b>44</b>
<b>All species</b>	<b>267,185</b>	<b>16,701</b>	<b>27,427</b>	<b>15,626</b>	<b>1,075</b>	<b>--</b>	<b>--</b>	<b>--</b>	<b>1,083</b>	<b>835</b>

(Table 46 continued on next page)

<sup>1/</sup>International 1/4-inch rule.

(Table 46 continued)

Species group	Forest type						
	Oak-hickory	Elm-ash-soft maple	Maple-birch	Aspen	Paper birch	Exotic	Non-stocked
Softwoods							
Jack pine	4,714	44	425	2,896	111	--	--
Red pine	716	74	348	226	627	--	--
White pine	5,050	1,741	5,086	867	1,075	--	--
White spruce	--	71	86	--	--	--	--
Black spruce	--	118	30	--	--	--	--
Balsam fir	--	219	423	44	--	--	--
Hemlock	24	12	1,208	63	--	--	--
Tamarack	--	11	--	68	-5	--	100
Eastern redcedar	--	--	--	--	--	--	--
Northern white-cedar	--	196	345	--	76	--	--
Other softwoods	--	--	--	--	--	--	--
Total	10,504	2,486	7,951	4,164	1,884	--	100
Hardwoods							
White oak	9,545	591	1,394	556	1,426	--	21
Select red oak	26,837	1,035	6,013	3,466	740	--	19
Other red oak	28,584	747	1,524	3,572	183	--	43
Select hickory	196	9	--	--	46	--	--
Other hickory	170	--	650	--	--	--	--
Basswood	817	748	5,552	415	101	--	--
Beech	--	--	119	--	--	--	--
Yellow birch	65	314	1,614	--	68	--	--
Hard maple	511	49	9,749	37	99	--	--
Soft maple	3,433	7,214	7,375	2,350	502	--	--
Elm	313	-2,283	-600	340	-159	--	-170
Black ash	31	4,134	804	130	124	--	--
White & green ash	1,352	1,602	1,787	--	118	--	--
Cottonwood	88	3	6	24	19	--	--
Willow	--	-238	53	103	56	--	--
Hackberry	--	--	--	--	--	--	--
Balsam poplar	--	--	--	--	--	--	--
Bigtooth aspen	2,881	--	1,355	7,653	762	--	--
Quaking aspen	2,638	2,207	3,346	13,410	515	--	--
Paper birch	336	317	1,055	253	1,498	--	--
River birch	15	2	--	--	--	--	--
Black cherry	148	--	206	--	25	--	--
Black walnut	--	--	25	--	--	--	--
Butternut	1,290	--	392	--	--	--	--
Other hardwoods	--	884	--	--	--	--	--
Total	79,250	17,335	42,419	32,309	6,123	--	-87
All species	89,754	19,821	50,370	36,473	8,007	--	13

Table 47.--Net annual growth of growing stock on commercial forest land by forest type, stand-size class, and basal-area class,  
Central Unit, Wisconsin, 1982  
(In thousand cubic feet)

Forest type and stand-size class	All classes	Forest area class (square feet per acre)						Basal area class (square feet per acre)							
		0-10	11-20	21-30	31-40	41-50	51-60	61-70	71-80	81-90	91-100	101-120	121-150	151-180	181+
Jack pine															
Sawtimber	829	--	--	--	29	--	189	47	54	65	96	234	115	--	--
Poletimber	4,125	--	--	128	95	415	483	521	1,151	564	465	110	--	--	193
Sapling & seedling	2,076	--	18	151	30	105	161	396	1,215	--	--	47	61	--	--
All stands	7,030	--	18	151	187	200	765	926	1,790	1,216	660	699	225	--	193
Red pine															
Sawtimber	1,600	--	--	--	--	--	--	160	361	247	309	296	227	--	--
Poletimber	12,177	--	--	--	7	--	118	147	453	796	415	2,084	2,404	1,535	4,225
Sapling & seedling	356	4	--	--	7	--	--	131	82	--	132	--	--	--	--
All stands	14,133	4	--	--	7	--	118	147	744	1,239	662	2,525	2,700	1,762	4,225
White pine															
Sawtimber	3,611	--	43	--	--	--	22	--	203	470	402	1,063	1,185	223	--
Poletimber	1,288	--	--	--	--	--	121	--	81	--	683	--	403	--	--
Sapling & seedling	257	--	--	--	--	30	--	--	227	--	--	--	--	--	--
All stands	5,156	--	43	--	--	30	143	--	430	551	402	1,746	1,185	626	--
Balsam fir															
Sawtimber	43	--	--	--	--	--	43	--	--	--	--	--	--	--	--
Poletimber	--	--	--	--	--	--	102	--	94	145	--	--	--	--	--
Sapling & seedling	355	--	--	14	--	--	--	--	--	--	--	--	--	--	--
All stands	398	--	--	14	--	145	--	94	145	--	--	--	--	--	--
White spruce															
Sawtimber	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Poletimber	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Sapling & seedling	10	--	--	--	--	--	--	--	--	10	--	--	--	--	--
All stands	10	--	--	--	--	--	--	--	--	10	--	--	--	--	--
Black spruce															
Sawtimber	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Poletimber	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Sapling & seedling	144	86	21	--	--	3	-3	--	--	--	--	37	--	--	--
All stands	144	86	21	--	--	3	-3	--	--	--	--	37	--	--	--
Northern white-cedar															
Sawtimber	33	--	--	--	--	--	--	--	33	--	--	--	--	--	--
Poletimber	569	--	--	--	--	--	--	--	--	--	47	61	140	321	321
Sapling & seedling	283	--	--	--	--	--	--	--	--	--	283	--	--	--	--
All stands	885	--	--	--	--	--	--	--	33	--	--	330	61	140	321

(Table 47 continued on next page)

(Table 47 continued)

Forest type and stand-size class	All classes	Basal area class (square feet per acre)												
		0-10	11-20	21-30	31-40	41-50	51-60	61-70	71-80	81-90	91-100	101-120	121-150	151-180
Tamarack														
Sawtimber	27	--	--	27	--	--	--	--	--	319	--	--	--	--
Poletimber	527	--	--	--	17	5	--	--	--	186	--	--	--	--
Sapling & seedling	102	3	-1	--	57	--	43	--	--	319	186	--	--	--
All stands	656	3	-1	27	17	62	--	43	--	319	186	--	--	--
Oak-hickory														
Sawtimber	10,428	--	--	-17	31	580	478	457	952	1,192	756	2,836	2,581	367
Poletimber	13,113	--	--	107	27	1,285	380	1,919	1,930	1,465	1,901	3,054	941	215
Sapling & seedling	1,896	-143	139	325	106	325	464	480	140	41	19	--	--	104
All stands	25,437	-143	139	308	244	932	2,227	1,317	3,011	3,163	2,240	4,737	5,635	1,308
Elm-ash-soft maple														
Sawtimber	2,519	--	-3	14	--	95	-3	79	138	409	308	300	845	337
Poletimber	2,973	--	173	25	155	-58	514	234	312	463	72	529	100	427
Sapling & seedling	1,628	11	73	18	180	275	611	242	196	--	--	22	--	--
All stands	7,120	11	243	57	335	312	1,122	555	646	872	380	851	945	764
Maple-birch														
Sawtimber	7,050	--	--	256	--	252	317	107	344	1,427	414	1,250	1,689	781
Poletimber	5,374	--	159	171	152	220	431	639	213	482	1,082	1,324	279	213
Sapling & seedling	3,435	17	584	257	251	311	610	191	396	449	263	74	32	--
All stands	15,859	17	584	672	422	715	1,147	729	1,379	2,089	1,159	2,406	3,045	1,060
Aspen														
Sawtimber	2,538	--	19	--	-13	24	18	22	268	282	319	922	238	487
Poletimber	12,130	--	18	30	65	394	777	813	1,049	1,627	789	3,728	1,865	816
Sapling & seedling	4,425	109	220	280	561	1,460	651	777	79	249	--	39	--	--
All stands	19,093	109	257	310	613	1,830	1,446	1,612	1,396	2,158	1,108	4,689	2,103	1,303
Paper birch														
Sawtimber	636	--	--	--	--	--	--	213	223	124	--	--	76	--
Poletimber	1,927	--	--	--	--	105	105	26	386	121	171	65	784	164
Sapling & seedling	1,553	20	185	242	113	258	511	--	185	--	39	--	--	--
All stands	4,116	20	185	242	113	363	616	239	609	430	171	104	860	164
Exotic														
Sawtimber	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Poletimber	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Sapling & seedling	38	--	--	--	--	--	--	--	--	38	--	--	--	--
All stands	38	--	--	--	--	--	--	--	--	38	--	--	--	--
Nonstocked	101	17	49	--	-38	--	--	--	--	--	26	--	47	--
All types														
Sawtimber	29,314	--	59	280	47	946	1,021	925	2,375	4,330	2,542	6,914	7,025	2,422
Poletimber	54,203	--	191	214	643	720	3,555	2,514	5,279	6,701	4,144	10,584	9,702	4,705
Sapling & seedling	16,558	107	1,239	1,287	1,248	2,926	3,005	2,223	2,577	1,006	282	626	32	5,251
Nonstocked	101	17	49	--	-38	--	--	--	--	26	--	47	--	--
All stands	100,176	124	1,538	1,781	1,900	4,592	7,581	5,662	10,231	12,037	6,994	18,124	16,806	7,127
														5,679

Table 48.—Net annual growth of sawtimber on commercial forest land by forest type, stand-size class, and basal-area class, Central Unit, Wisconsin, 1982  
(In thousand board feet)<sup>1/</sup>

Forest type and stand-size class	All classes	Basal area class (square feet per acre)						181+
		0-10	11-20	21-30	31-40	41-50	51-60	
Jack pine								
Sawtimber	5,357	--	--	--	127	--	1,016	425
Poletimber	9,856	--	--	--	--	156	1,749	911
Sapling & seedling	1,488	--	69	--	--	379	367	371
All stands	16,701	--	69	--	127	535	3,132	1,302
Red pine								
Sawtimber	13,891	--	--	--	--	--	--	667
Poletimber	12,411	--	--	--	--	--	600	--
Sapling & seedling	1,125	21	--	--	85	--	--	385
All stands	27,427	21	--	--	85	--	600	1,052
White pine								
Sawtimber	14,663	--	240	--	--	196	--	1,007
Poletimber	1,030	--	--	--	--	133	--	--
Sapling & seedling	-67	--	--	--	--	-67	--	--
All stands	15,626	--	240	--	--	262	--	1,007
Balsam fir								
Sawtimber	143	--	--	--	--	143	--	--
Poletimber	--	--	--	--	--	--	--	--
Sapling & seedling	932	--	--	23	--	660	--	28
All stands	1,075	--	--	23	--	803	--	221
White spruce								
Sawtimber	--	--	--	--	--	--	--	--
Poletimber	--	--	--	--	--	--	--	--
Sapling & seedling	--	--	--	--	--	--	--	--
All stands	--	--	--	--	--	--	--	--
Black spruce								
Sawtimber	--	--	--	--	--	--	--	--
Poletimber	--	--	--	--	--	--	--	--
Sapling & seedling	--	--	--	--	--	--	--	--
All stands	--	--	--	--	--	--	--	--
Northern white-cedar								
Sawtimber	243	--	--	--	--	--	--	243
Poletimber	840	--	--	--	--	--	--	--
Sapling & seedling	--	--	--	--	--	--	--	--
All stands	1,083	--	--	--	--	--	--	243

<sup>1/</sup> International 1/4-inch rule.

(Table 48 continued on next page)

(Table 48 continued)

Forest type and stand-size class	All classes	Basal area class (square feet per acre)													
		0-10	11-20	21-30	31-40	41-50	51-60	61-70	71-80	81-90	91-100	101-120	121-150	151-180	181+
Tamarack															
Sawtimber	130	--	--	130	--	--	--	--	--	--	--	--	--	--	
Poletimber	465	--	--	--	--	--	--	--	--	--	--	--	--	--	
Sapling & seedling	240	11	--	--	--	229	--	--	--	135	330	--	--	--	
All stands	835	11	--	130	--	229	--	--	--	135	330	--	--	--	
Oak-hickory															
Sawtimber	54,773	--	--	-74	786	2,258	2,337	3,239	5,828	5,519	4,286	16,676	11,843	1,501	574
Poletimber	26,295	--	--	--	261	35	3,334	981	3,078	3,652	2,496	4,239	7,042	1,099	78
Sapling & seedling	8,686	-94	244	1,611	1,700	431	2,882	750	741	315	106	--	--	--	--
All stands	89,754	-94	244	1,537	2,747	2,724	8,553	4,970	9,647	9,486	6,888	20,915	18,885	2,600	652
Elm-ash-soft maple															
Sawtimber	12,624	--	-51	25	--	805	62	402	1,133	1,629	1,136	1,621	3,911	1,951	--
Poletimber	3,802	--	--	32	132	-387	384	248	276	1,470	65	1,049	161	153	219
Sapling & seedling	3,395	6	1,115	33	198	16	186	163	742	--	--	936	--	--	--
All stands	19,821	6	1,064	90	330	434	632	813	2,151	3,099	1,201	3,606	4,072	2,104	219
Maple-birch															
Sawtimber	33,243	--	--	478	--	938	823	286	2,328	6,405	2,511	6,292	8,979	2,900	1,303
Poletimber	11,962	--	--	303	353	90	595	796	1,880	1,551	553	1,568	3,634	50	589
Sapling & seedling	5,165	64	568	470	517	954	568	85	377	551	169	681	161	--	--
All stands	50,370	64	568	1,251	870	1,982	1,986	1,167	4,585	8,507	3,233	8,541	12,774	2,950	1,892
Aspen															
Sawtimber	13,152	--	79	--	563	278	308	370	1,104	1,850	1,223	4,215	1,563	1,599	--
Poletimber	18,069	--	--	29	744	373	823	1,124	1,153	4,350	739	5,427	2,451	628	228
Sapling & seedling	5,252	153	1,154	215	703	1,222	438	978	--	369	--	20	--	--	--
All stands	36,473	153	1,233	244	2,010	1,873	1,569	2,472	2,257	6,569	1,962	9,662	4,014	2,227	228
Paper birch															
Sawtimber	1,918	--	--	--	--	--	--	863	120	244	--	--	691	--	
Poletimber	5,150	--	--	--	--	75	105	-61	497	1,554	28	813	1,813	326	--
Sapling & seedling	939	131	-43	71	25	111	294	--	350	--	--	--	--	--	--
All stands	8,007	131	-43	71	25	186	399	802	617	2,148	28	813	2,504	326	--
Exotic															
Sawtimber	--	--	--	--	--	--	--	--	--	--	--	--	--	--	
Poletimber	--	--	--	--	--	--	--	--	--	--	--	--	--	--	
Sapling & seedling	--	--	--	--	--	--	--	--	--	--	--	--	--	--	
All stands	--	--	--	--	--	--	--	--	--	--	--	--	--	--	
Nonstocked	13	100	52	--	-130	--	--	--	--	--	-9	--	--	--	
All types															
Sawtimber	150,137	--	268	559	1,476	4,422	4,742	5,595	12,855	20,601	16,647	36,732	34,366	9,997	1,877
Poletimber	89,880	--	--	364	1,490	342	7,123	4,184	7,795	16,681	5,365	14,794	20,408	3,347	8,187
Sapling & seedling	27,155	292	3,107	2,423	3,228	4,002	4,668	2,375	2,768	1,743	275	2,113	161	--	--
Nonstocked	13	100	52	--	-130	--	--	--	--	-9	--	--	--	--	
All stands	267,185	392	3,427	3,246	6,064	8,766	16,533	12,154	23,418	38,825	22,278	53,639	54,935	13,344	10,664

Table 49.—Timber removals from growing stock on commercial forest land by species group and county, Central Unit, Wisconsin, 1982  
(In thousand cubic feet)

11/ Includes black cherry and butternut.

Table 50.—Timber removals from sawtimber on commercial forest land by species group and county, Central Unit, Wisconsin, 1982  
(In thousand board feet)<sup>1/</sup>

Species group	All counties	County									Waushara Wood
		Adams	Chippewa	Clark	Eau Claire	Jackson	Juneau	Marathon	Marquette	Monroe	
Softwoods											
Jack pine	6,070	1,333	105	240	691	1,031	1,169	114	107	582	321
Red pine	8,634	1,192	804	402	--	724	897	556	--	473	792
White pine	11,064	524	635	1,368	1,220	1,256	573	627	86	1,011	982
White spruce	--	--	--	--	--	--	--	--	--	--	--
Black spruce	--	--	--	--	--	--	--	--	--	--	--
Balsam fir	68	--	--	--	--	--	--	63	--	--	5
Hemlock	850	--	--	--	--	--	--	535	--	--	249
Tamarack	90	--	--	--	--	--	--	4	3	--	2
Northern white-cedar	123	--	--	--	--	--	--	27	--	4	92
Other softwoods	--	--	--	--	--	--	--	--	--	--	--
Total	26,899	3,049	1,544	2,010	1,911	3,011	2,639	1,926	196	2,066	2,246
Hardwoods											
White oak	13,363	505	2,118	1,476	1,289	1,142	1,282	348	380	1,681	482
Select red oak	33,359	374	6,872	4,312	2,362	3,065	1,961	3,435	217	4,378	754
Other red oak	15,930	1,304	1,447	307	2,582	1,419	2,670	196	872	1,630	926
Hickory	420	--	13	8	--	43	--	21	51	--	127
Basswood	4,366	22	688	891	95	--	122	1,191	10	117	326
Beech	80	--	--	--	--	--	--	--	--	80	--
Yellow birch	664	--	131	--	--	--	--	424	--	--	80
Hard maple	9,249	--	932	1,845	186	--	286	3,155	--	482	167
Soft maple	6,153	82	778	867	299	154	319	1,325	66	184	208
Elm	6,275	66	964	735	193	50	271	2,155	32	373	79
Ash	3,879	29	538	441	--	44	121	1,550	30	141	85
Cottonwood	18	5	--	--	--	--	13	--	--	--	--
Balsam poplar	--	--	--	--	--	--	--	--	--	67	--
Bigtooth aspen	9,960	28	3,369	1,122	253	672	353	1,543	--	291	547
Quaking aspen	16,082	77	2,062	4,113	824	347	970	3,761	103	38	993
Paper birch	1,314	--	371	108	74	56	74	238	--	69	37
Black walnut	--	--	--	--	--	--	--	--	--	--	--
Other hardwoods <sup>2/</sup>	375	59	71	31	24	22	--	55	--	3	10
Total	121,487	2,551	20,354	16,256	8,181	7,014	8,463	19,427	1,710	9,514	4,621
All species	148,386	5,600	21,898	18,266	10,092	10,025	11,102	21,353	1,906	11,580	6,867

<sup>1/</sup> International  $\frac{1}{4}$ -inch rule.

<sup>2/</sup> Includes black cherry and butternut.

Table 51.--Growing-stock average annual removals on commercial forest land by species group and county, Central Unit, Wisconsin, 1967-1983  
(In thousand cubic feet per year)

Species group	All counties	County										Wood	
		Adams	Chippewa	Clark	Eau Claire	Jackson	Juneau	Marathon	Marquette	Monroe	Portage	Waupaca	Waushara
Softwoods													
Jack pine	3,049	976	--	229	301	697	450	29	--	329	--	--	--
Red pine	1,086	81	68	--	--	--	--	437	292	175	--	--	33
White pine	1,514	--	--	--	--	--	--	175	460	411	265	106	97
White spruce	--	--	--	--	--	--	--	--	--	--	--	--	--
Black spruce	--	--	--	--	--	--	--	--	--	--	--	--	--
Balsam fir	63	--	--	--	--	--	--	63	--	--	--	--	--
Hemlock	185	--	--	--	--	--	--	185	--	--	--	--	--
Tamarack	43	--	43	--	--	--	--	--	--	--	--	--	--
Eastern redcedar	--	--	--	--	--	--	--	--	--	--	--	--	--
Northern white-cedar	--	--	--	--	--	--	--	--	--	--	--	--	--
Other softwoods	--	--	--	--	--	--	--	--	--	--	--	--	--
Total	5,940	1,067	111	229	301	697	450	889	752	329	586	265	106
Hardwoods													
White oak	949	122	--	417	116	--	--	--	29	54	134	--	77
Select red oak	2,108	--	361	375	361	94	--	113	383	--	294	--	127
Other red oak	1,270	537	--	91	42	354	--	--	81	--	64	101	101
Select hickory	--	--	--	--	--	--	--	--	--	--	--	--	--
Other hickory	44	--	--	--	--	--	--	44	--	--	--	--	--
Basswood	1,164	--	449	148	--	--	--	290	--	--	--	--	277
Beech	--	--	--	--	--	--	--	--	--	--	--	--	--
Yellow birch	866	--	36	--	--	--	--	678	--	--	51	--	101
Hard maple	1,382	--	96	197	--	--	--	688	--	--	284	--	118
Soft maple	1,240	--	142	55	--	29	--	260	--	31	249	341	133
Elm	4,274	--	159	832	--	--	--	2,365	--	33	24	506	388
Black ash	524	--	372	42	--	--	--	--	--	--	--	--	77
White & green ash	576	--	52	--	--	--	--	391	--	--	29	--	104
Cottonwood	--	--	--	--	--	--	--	--	--	--	--	--	--
Willow	--	--	--	--	--	--	--	--	--	--	--	--	--
Hackberry	--	--	--	--	--	--	--	--	--	--	--	--	--
Balsam poplar	--	--	--	--	--	--	--	--	--	--	--	--	--
Bightooth aspen	1,047	53	150	65	81	--	--	83	136	129	--	73	217
Quaking aspen	6,799	136	1,808	1,398	229	32	53	1,815	--	316	--	1,012	171
Paper birch	969	--	--	137	--	--	--	661	--	--	--	--	--
River birch	30	--	--	--	--	30	--	--	--	--	--	--	--
Black cherry	--	--	--	--	--	--	--	--	--	--	--	--	--
Black walnut	--	--	--	--	--	--	--	--	--	--	--	--	--
Butternut	--	--	--	--	--	--	--	--	--	--	--	--	--
Other hardwoods	--	--	--	--	--	--	--	--	--	--	--	--	--
Total	23,242	848	3,624	3,666	878	287	490	7,441	33	572	753	1,683	64
All species	29,182	1,905	3,735	3,895	1,179	984	940	8,330	785	901	1,339	1,948	170
													2,903
													3,071

Table 52.--Sawtimber average annual removals on commercial forest land by species group and county, Central Unit, Wisconsin, 1967-1983  
(In thousand board feet per year)<sup>1/</sup>

Species group	All		County						Montoe	Portage	Waupaca	Waushara	Wood
	counties	Adams	Chippewa	Clark	Eau Claire	Jackson	Juneau	Marquette					
Softwoods													
Jack pine	8,392	2,984	--	1,217	578	607	1,235	--	--	1,567	--	--	--
Red pine	1,243	--	389	--	--	--	--	315	--	352	--	--	204
White pine	7,535	--	--	--	--	--	--	471	2,566	--	1,965	1,462	511
White spruce	--	--	--	--	--	--	--	--	--	--	--	--	187
Black spruce	--	--	--	--	--	--	--	--	--	--	--	--	560
Balsam fir	--	--	--	--	--	--	--	--	--	--	--	--	--
Hemlock	878	--	--	--	--	--	--	878	--	--	--	--	--
Tamarack	--	--	--	--	--	--	--	--	--	--	--	--	--
Eastern redcedar	--	--	--	--	--	--	--	--	--	--	--	--	--
Northern white-cedar	--	--	--	--	--	--	--	--	--	--	--	--	--
Other softwoods	--	--	--	--	--	--	--	--	--	--	--	--	--
Total	18,048	2,984	389	1,217	578	607	1,235	1,664	2,566	1,567	2,317	1,462	511
Hardwoods													951
White oak	3,972	379	2,112	--	--	--	--	--	--	155	299	657	--
Select red oak	8,171	--	1,431	1,522	357	460	--	--	--	1,938	--	1,445	--
Other red oak	4,386	1,085	--	--	449	175	1,651	--	--	--	409	--	150
Select hickory	--	--	--	--	--	--	--	--	--	--	--	--	--
Other hickory	259	--	--	--	--	--	--	259	--	--	--	--	--
Basswood	4,686	--	2,195	--	--	--	--	1,427	--	--	--	--	1,064
Beech	--	--	--	--	--	--	--	--	--	--	--	--	--
Yellow birch	3,398	--	--	--	--	--	--	2,650	--	--	--	248	--
Hard maple	4,501	--	300	--	--	--	--	2,442	--	--	--	1,485	--
Soft maple	3,974	--	744	--	--	--	--	945	--	168	443	1,242	--
Elm	14,456	--	305	1,702	--	--	--	9,285	--	--	--	2,138	--
Black ash	450	--	--	236	--	--	--	--	--	--	--	--	214
White & green ash	2,759	--	--	--	--	--	--	2,030	--	--	164	--	565
Cottonwood	--	--	--	--	--	--	--	--	--	--	--	--	--
Willow	--	--	--	--	--	--	--	--	--	--	--	--	--
Huckleberry	--	--	--	--	--	--	--	--	--	--	--	--	--
Balsam poplar	--	--	--	--	--	--	--	--	--	--	--	--	--
Bigtooth aspen	3,807	251	704	315	374	--	--	639	--	591	--	331	--
Quaking aspen	14,349	495	4,453	2,698	404	--	--	4,699	--	--	680	--	920
Paper birch	748	--	--	467	--	--	--	--	--	--	--	--	281
River birch	--	--	--	--	--	--	--	--	--	--	--	--	--
Black cherry	--	--	--	--	--	--	--	--	--	--	--	--	--
Black walnut	--	--	--	--	--	--	--	--	--	--	--	--	--
Butternut	--	--	--	--	--	--	--	--	--	--	--	--	--
Other hardwoods	--	--	--	--	--	--	--	--	--	--	--	--	--
Total	69,916	2,210	9,832	9,352	1,584	635	1,651	24,931	--	2,852	1,995	7,546	150
All species	87,964	5,194	10,221	10,569	2,162	1,242	2,886	26,595	2,566	4,419	4,312	9,008	661
													8,129

<sup>1/</sup> International 1/4-inch rule.

Table 53.--Timber removals from growing stock and sawtimber on commercial forest land by species group, Central Unit, Wisconsin, 1967 and 1982

Species group	Growing stock		Sawtimber	
	1967	1982	1967	1982
	Thousand cubic feet		Thousand board feet <sup>1/</sup>	
Softwoods				
Jack pine	5,021	4,740	10,507	6,070
Red pine	448	5,405	1,294	8,634
White pine	925	2,454	4,564	11,064
White spruce	8	--	54	--
Black spruce	23	37	51	--
Balsam fir	52	41	137	68
Hemlock	232	189	1,108	850
Tamarack	64	96	108	90
Northern white-cedar	106	29	158	123
Other softwoods	1	--	1	--
Total	6,880	12,991	17,982	26,899
Hardwoods				
White oak	2,426	3,387	6,870	13,363
Select red oak	8,950	7,635	32,179	33,359
Other red oak	3,310	4,381	9,188	15,930
Hickory	288	111	645	420
Basswood	1,304	1,061	5,048	4,366
Beech	15	17	60	80
Yellow birch	371	307	1,178	664
Hard maple	2,510	2,371	9,234	9,249
Soft maple	2,793	1,845	7,251	6,153
Elm	2,772	2,257	9,726	6,275
Ash	1,221	1,312	3,110	3,879
Cottonwood	43	3	243	18
Balsam poplar	3	--	21	--
Bigtooth aspen	1,851	2,638	5,698	9,960
Quaking aspen	5,849	6,750	10,527	16,082
Paper birch	1,125	937	1,522	1,314
Black walnut	9	--	56	--
Other hardwoods <sup>2/</sup>	225	152	1,176	375
Total	35,065	35,164	103,732	121,487
All species	41,945	48,155	121,714	148,386

<sup>1/</sup> International 1/4-inch rule.

<sup>2/</sup> Includes black cherry and butternut.

Table 54.--Timber removals from growing stock and sawtimber on commercial forest land by item and species category, Central Unit, Wisconsin, 1982

Item	Species	Growing stock				Sawtimber						
		All species	Pine	Other softwoods	Aspen	Oak	Other hardwoods	All species	Pine	Other softwoods	Aspen	Oak
- - - - - Thousand cubic feet - - - - -												
Roundwood products												
Pulpwood <sup>2/</sup>	20,333	9,605	180	5,689	2,653	2,206	37,654	14,264	291	13,266	6,218	3,615
Saw logs	16,095	1,983	160	1,874	8,064	4,014	83,980	10,208	779	9,462	42,969	20,562
Fuelwood	6,180	86	11	615	3,219	2,249	18,004	259	34	1,873	9,600	6,238
Posts	455	374	--	3	52	26	527	352	--	7	114	54
Veneer logs	188	--	--	3	77	108	1,195	--	--	20	499	676
Poles	3	--	1	--	2	--	16	--	3	--	13	--
Other	81	--	--	61	5	15	431	--	--	318	39	74
Total	43,335	12,048	352	8,245	14,072	8,618	141,807	25,083	1,107	24,946	59,452	31,219
Logging residue	2,692	311	10	482	1,255	634	5,768	533	24	437	3,200	1,574
Other removals	2,128	240	30	661	76	1,121	811	152	--	659	--	--
All removals	48,155	12,599	392	9,388	15,403	10,373	148,386	25,768	1,131	26,042	62,652	32,793

<sup>1/</sup> International 1/4-inch rule.

<sup>2/</sup> Includes particleboard and waferboard bolts.

Table 55.--Annual mortality of growing stock on commercial forest land by softwoods and hardwoods, Central Unit, Wisconsin, 1967 and 1982

(In thousand cubic feet)

Species	1967 <sup>1/</sup>	
	1982	1982
Softwoods	1,500	2,868
Hardwoods	13,700	21,298
Total	15,200	24,166

<sup>1/</sup> Figures have been adjusted from those published after the 1968 survey to conform to 1982 volumes because of changes in survey procedures.

Table 56.--Annual mortality of growing stock on commercial forest land by species group and cause,  
Central Unit, Wisconsin, 1982  
(In thousand cubic feet)

Species group	All causes	Cause							Unknown and other
		Insects	Disease	Fire	Animals	Weather	Suppression		
<b>Softwoods</b>									
Jack pine	1,590	4	86	228	1	153	31	1,087	
Red pine	10	--	--	10	--	--	--	--	
White pine	310	12	47	--	--	--	--	251	
White spruce	1	--	--	--	--	--	--	1	
Black spruce	--	--	--	--	--	--	--	--	
Balsam fir	265	13	2	--	1	38	--	211	
Hemlock	204	--	5	--	7	41	--	151	
Tamarack	427	--	34	--	--	132	--	261	
Eastern redcedar	--	--	--	--	--	--	--	--	
Northern white-cedar	52	--	--	--	--	--	--	52	
Other softwoods	9	--	--	--	1	--	--	8	
<b>Total</b>	<b>2,868</b>	<b>29</b>	<b>174</b>	<b>238</b>	<b>10</b>	<b>364</b>	<b>31</b>	<b>2,022</b>	
<b>Hardwoods</b>									
White oak	515	--	10	--	4	17	2	482	
Select red oak	1,411	--	122	--	--	107	15	1,167	
Other red oak	1,466	1	197	--	1	132	1	1,134	
Select hickory	1	--	1	--	--	--	--	--	
Other hickory	28	--	--	--	--	15	--	13	
Basswood	374	--	1	--	--	18	--	355	
Beech	13	--	7	--	--	--	--	6	
Yellow birch	259	--	3	--	--	--	--	256	
Hard maple	330	--	11	--	3	8	16	292	
Soft maple	1,047	1	90	45	4	20	7	880	
Elm	4,193	200	1,061	--	6	--	--	2,926	
Black ash	219	--	--	--	--	27	--	192	
White & green ash	95	--	1	--	--	21	--	73	
Cottonwood	7	--	--	--	3	--	--	4	
Willow	82	--	--	--	--	33	--	49	
Hackberry	--	--	--	--	--	--	--	--	
Balsam poplar	15	--	--	--	--	--	--	15	
Bigtooth aspen	2,105	7	258	27	--	37	--	1,776	
Quaking aspen	7,945	--	1,412	59	14	560	52	5,848	
Paper birch	817	--	190	11	--	12	--	604	
River birch	139	--	41	--	--	--	--	98	
Black cherry	155	--	91	--	--	13	--	51	
Black walnut	--	--	--	--	--	--	--	--	
Butternut	59	--	--	--	--	--	--	59	
Other hardwoods	23	--	2	--	--	--	--	21	
<b>Total</b>	<b>21,298</b>	<b>209</b>	<b>3,498</b>	<b>142</b>	<b>35</b>	<b>1,020</b>	<b>93</b>	<b>16,301</b>	
<b>All species</b>	<b>24,166</b>	<b>238</b>	<b>3,672</b>	<b>380</b>	<b>45</b>	<b>1,384</b>	<b>124</b>	<b>18,323</b>	

Table 57.--Annual mortality of sawtimber on commercial forest land by species group and cause,  
Central Unit, Wisconsin, 1982  
(In thousand board feet)<sup>1/</sup>

Species group	All causes	Cause						Unknown and other
		Insects	Disease	Fire	Animals	Weather	Suppression	
<b>Softwoods</b>								
Jack pine	3,292	5	162	254	--	560	6	2,305
Red pine	--	--	--	--	--	--	--	--
White pine	1,316	11	278	--	--	--	2	1,025
White spruce	--	--	--	--	--	--	--	--
Black spruce	--	--	--	--	--	--	--	--
Balsam fir	189	--	3	--	--	--	--	186
Hemlock	665	--	10	--	24	150	--	481
Tamarack	416	--	--	--	--	238	--	178
Eastern redcedar	--	--	--	--	--	--	--	--
Northern white-cedar	36	5	--	--	5	5	--	21
Other softwoods	4	--	--	--	--	--	--	4
<b>Total</b>	<b>5,918</b>	<b>21</b>	<b>453</b>	<b>254</b>	<b>29</b>	<b>953</b>	<b>8</b>	<b>4,200</b>
<b>Hardwoods</b>								
White oak	992	--	23	--	13	23	--	933
Select red oak	3,855	--	463	--	--	491	--	2,901
Other red oak	3,094	--	286	--	--	515	--	2,293
Select hickory	9	--	4	--	--	--	--	5
Other hickory	4	--	--	--	--	--	--	4
Basswood	888	--	--	--	--	86	--	802
Beech	31	--	--	--	--	--	--	31
Yellow birch	439	--	9	--	--	--	--	430
Hard maple	971	--	32	--	4	9	76	850
Soft maple	1,445	--	140	--	10	11	--	1,284
Elm	13,587	510	11,618	--	28	--	--	1,431
Black ash	175	--	--	--	--	--	--	175
White & green ash	163	--	6	--	--	66	--	91
Cottonwood	35	--	--	--	15	--	--	20
Willow	326	--	--	--	--	135	--	191
Hackberry	--	--	--	--	--	--	--	--
Balsam poplar	--	--	--	--	--	--	--	--
Bigtooth aspen	2,808	30	278	--	--	159	--	2,341
Quaking aspen	4,480	--	1,202	--	--	250	--	3,028
Paper birch	234	--	2	--	--	--	--	232
River birch	259	--	--	--	--	--	--	259
Black cherry	79	--	--	--	--	61	--	18
Black walnut	--	--	--	--	--	--	--	--
Butternut	245	--	--	--	--	--	--	245
Other hardwoods	14	--	--	--	--	--	--	14
<b>Total</b>	<b>34,133</b>	<b>540</b>	<b>14,063</b>	<b>--</b>	<b>70</b>	<b>1,806</b>	<b>76</b>	<b>17,578</b>
<b>All species</b>	<b>40,051</b>	<b>561</b>	<b>14,516</b>	<b>254</b>	<b>99</b>	<b>2,759</b>	<b>84</b>	<b>21,778</b>

<sup>1/</sup> International 1/4-inch rule.

Table 58.--Annual mortality of growing stock and sawtimber on commercial forest land by county and softwoods and hardwoods, Central Unit, Wisconsin, 1982

County	Growing stock			Sawtimber		
	All species	Softwoods	Hardwoods	All species	Softwoods	Hardwoods
	- - - Thousand cubic feet - - -			- - - Thousand board feet <sup>1/</sup> - - -		
Adams	1,089	350	739	1,966	916	1,050
Chippewa	2,028	117	1,911	3,543	253	3,290
Clark	3,238	66	3,172	4,104	341	3,763
Eau Claire	1,273	87	1,186	1,593	96	1,497
Jackson	2,501	372	2,129	3,520	641	2,879
Juneau	1,991	440	1,551	3,667	901	2,766
Marathon	4,049	315	3,734	7,515	544	6,971
Marquette	316	77	239	768	26	742
Monroe	1,409	248	1,161	3,214	680	2,534
Portage	1,468	156	1,312	2,144	242	1,902
Waupaca	2,163	299	1,864	5,022	601	4,421
Waushara	725	212	513	938	395	543
Wood	1,916	129	1,787	2,057	282	1,775
All counties	24,166	2,868	21,298	40,051	5,918	34,133

<sup>1/</sup> International 1/4-inch rule.

Table 59.--Annual mortality of growing stock and sawtimber on commercial forest land by ownership class and softwoods and hardwoods, Central Unit, Wisconsin, 1982

Ownership class	Growing stock			Sawtimber		
	All species	Softwoods	Hardwoods	All species	Softwoods	Hardwoods
	- - - Thousand cubic feet - - -			- - - Thousand board feet <sup>1/</sup> - - -		
National Forest	--	--	--	--	--	--
Miscellaneous federal	644	168	476	928	473	455
State	576	153	423	701	446	255
County and municipal	3,784	299	3,485	2,492	362	2,130
Indian	27	--	27	--	--	--
Forest industry	1,303	125	1,178	1,874	251	1,623
Farmer	8,399	1,010	7,389	17,752	1,697	16,055
Misc. private-corp.	1,020	90	930	1,378	83	1,295
Misc. private-indiv.	8,413	1,023	7,390	14,926	2,606	12,320
All owners	24,166	2,868	21,298	40,051	5,918	34,133

<sup>1/</sup> International 1/4-inch rule.

Table 60.—Output of timber products by product, softwoods and hardwoods, and source of material, Central Unit, Wisconsin, 1981

Product	Standard units	Roundwood products						Plant byproducts	
		Total	No. of units	Thousands cubic feet	No. of units	Thousands cubic feet	No. of units	Thousands cubic feet	
Pulpwood <sup>1/</sup>	Standard <sup>2/</sup> cords	159,290	12,559	124,110	9,785	29,097	2,294	6,083	480
	Softwoods	209,362	16,531	133,610	10,548	28,057	2,215	47,695	3,768
	Total	368,652	29,090	257,720	20,333	57,154	4,509	53,778	4,248
Saw logs	Softwoods	85,514	14,949	2,253	12,578	2,143	646	110	--
	Hardwoods	98,738	17,202	92,389	16,095	6,349	5,703	997	--
	Total	1,278	202	1,189	188	89	14	1,107	--
Veneer logs	Softwoods	15,532	1,081	1,398	97	8,314	577	5,820	407
	Hardwoods	521,803	36,506	86,952	6,083	396,609	27,746	38,242	2,677
	Total	537,335	37,587	88,350	6,180	404,923	28,323	44,062	3,084
Fuelwood	Softwoods	412	424	363	374	49	50	--	--
	Hardwoods	132	131	82	81	50	50	--	--
	Total	544	555	445	455	99	100	--	--
Posts	Softwoods	100	1	100	1	--	--	--	--
	Hardwoods	350	2	350	2	--	--	--	--
	Total	450	3	450	3	--	--	--	--
Poles	Softwoods	409	409	--	--	--	--	409	409
	Hardwoods	1,896	1,896	81	81	--	--	1,815	1,815
	Total	2,305	2,305	81	81	--	--	2,224	2,224
Other <sup>4/</sup>	Softwoods	--	16,727	--	12,400	--	3,031	--	1,296
	Hardwoods	--	70,217	--	30,935	--	31,022	--	8,260
	Total	--	86,944	--	43,335	--	34,053	--	9,556

<sup>1/</sup> Includes roundwood and plant byproducts used for particleboard and waferboard.

<sup>2/</sup> 128 cubic feet; includes wood, bark, and air space.

<sup>3/</sup> International 1/4-inch rule.

<sup>4/</sup> Other (industrial production) includes cabin logs, charcoal wood, shingle bolts, pilings, etc.

Table 61.--Output of roundwood products by product, softwoods and hardwoods, and source of material, Central Unit, Wisconsin, 1981  
(In thousand cubic feet)

Product and species group	All sources	Growing-stock trees			Rough and rotten trees	Salvable dead trees	Other sources
		Total	Sawtimber	Pole timber			
<b>Industrial products</b>							
Saw logs							
Softwoods	2,263	2,143	2,033	110	---	31	79
Hardwoods	14,949	13,952	12,699	1,253	220	550	227
Subtotal	17,202	16,095	14,732	1,363	220	581	306
Veneer logs and bolts							
Softwoods	--	--	--	--	--	--	--
Hardwoods	202	188	188	--	14	--	--
Subtotal	202	188	188	--	14	--	--
Pulpwood <sup>1</sup>							
Softwoods	12,079	9,785	4,229	5,556	247	860	1,187
Hardwoods	12,763	10,548	6,084	4,464	1,063	424	728
Subtotal	24,842	20,333	10,313	10,020	1,310	1,284	1,915
Cooperage							
Softwoods	--	--	--	--	--	--	--
Hardwoods	5	5	5	--	--	--	--
Subtotal	5	5	5	--	--	--	--
Piling							
Softwoods	--	--	--	--	--	--	--
Hardwoods	--	--	--	--	--	--	--
Subtotal	--	--	--	--	--	--	--
Poles							
Softwoods	1	1	1	--	--	--	--
Hardwoods	2	2	2	--	--	--	--
Subtotal	3	3	3	--	--	--	--
Posts (Round and split)							
Softwoods	424	374	100	274	6	--	--
Hardwoods	131	81	34	47	25	--	--
Subtotal	565	455	134	321	31	--	--
Other							
Softwoods	--	--	--	--	--	--	--
Hardwoods	76	76	55	21	--	--	--
Subtotal	76	76	55	21	--	--	--
All industrial products							
Softwoods	14,757	12,303	6,363	5,940	253	891	1,310
Hardwoods	28,128	24,852	19,067	5,785	1,322	974	980
Total	42,885	37,155	25,430	11,725	1,575	1,865	2,290
Fuelwood							
Softwoods	674	97	56	41	21	328	228
Hardwoods	33,829	6,083	3,717	2,366	1,201	18,517	8,028
Total	34,503	6,180	3,773	2,407	1,222	18,845	8,256
All products							
Softwoods	15,431	12,400	6,419	5,981	274	1,219	1,538
Hardwoods	61,957	30,935	22,784	8,151	2,523	19,491	9,008
Total	77,388	43,335	29,203	14,132	2,797	20,710	10,546

<sup>1</sup>/Includes particleboard and waferboard bolts.

Table 62.--Timber products from roundwood by species group and product, Central Unit, Wisconsin, 1981

Species group	All products		Pulpwood <sup>1/</sup>		Saw logs		Veneer logs	
	Thousand cubic feet	Standard cords <sup>2/</sup>	Thousand cubic feet	Thousand board feet <sup>3/</sup>	Thousand cubic feet	Thousand board feet <sup>3/</sup>	Thousand cubic feet	Thousand cubic feet
<b>Softwoods</b>								
Jack pine	6,046	71,121	5,606	167	34	--	--	--
Red pine	6,309	69,635	5,501	1,974	330	--	--	--
White pine	2,621	9,487	749	10,053	1,706	--	--	--
White spruce	--	--	--	--	--	--	--	--
Black spruce	52	479	34	87	18	--	--	--
Balsam fir	83	524	40	16	3	--	--	--
Hemlock	213	1,043	79	790	134	--	--	--
Tamarack	70	918	70	--	--	--	--	--
Northern white-cedar	37	--	--	137	28	--	--	--
Other softwoods	--	--	--	--	--	--	--	--
<b>Total</b>	<b>15,431</b>	<b>153,207</b>	<b>12,079</b>	<b>13,224</b>	<b>2,253</b>	<b>--</b>	<b>--</b>	<b>--</b>
<b>Hardwoods</b>								
White oak	6,785	11,725	926	9,815	1,719	8	1	
Select red oak	14,976	19,972	1,578	24,455	4,285	328	53	
Other red oak	8,591	11,460	905	14,032	2,458	188	30	
Hickory	214	53	3	367	63	--	--	
Basswood	1,023	682	52	5,174	921	99	17	
Beech	36	3	4/	203	36	--	--	
Yellow birch	816	2,745	215	497	86	147	21	
Hard maple	3,670	7,837	619	7,277	1,214	142	24	
Soft maple	3,191	7,150	566	4,941	881	122	20	
Elm	6,931	7,847	619	4,481	797	178	27	
Ash	2,372	3,441	273	2,547	454	12	1	
Cottonwood	3	--	--	24	3	--	--	
Balsam poplar	2	--	--	11	2	--	--	
Bigtooth aspen	3,025	22,362	1,766	3,056	532	6	1	
Quaking aspen	7,742	57,220	4,518	7,820	1,363	15	2	
Paper birch	2,113	8,985	709	570	96	33	5	
Black walnut	2	--	--	24	2	--	--	
Other hardwoods <sup>5/</sup>	465	185	14	220	37	--	--	
<b>Total</b>	<b>61,957</b>	<b>161,667</b>	<b>12,763</b>	<b>85,514</b>	<b>14,949</b>	<b>1,278</b>	<b>202</b>	
<b>All species</b>	<b>77,388</b>	<b>314,874</b>	<b>24,842</b>	<b>98,738</b>	<b>17,202</b>	<b>1,278</b>	<b>202</b>	

(Table 62 continued on next page)

<sup>1/</sup> Includes particleboard and waferboard bolts.<sup>2/</sup> 128 cubic feet; includes wood, bark, and air space.<sup>3/</sup> International 1/4-inch rule.<sup>4/</sup> Less than 500 cubic feet.<sup>5/</sup> Includes butternut and black cherry.

(Table 62 continued)

Species group	Fuelwood		Posts		Poles		Other products
	Standard cords	Thousand cubic feet	Thousand pieces	Thousand cubic feet	Pieces	Thousand cubic feet	Thousand cubic feet
<b>Softwoods</b>							
Jack pine	5,852	406	--	--	--	--	--
Red pine	787	54	412	424	--	--	--
White pine	2,380	166	--	--	--	--	--
White spruce	--	--	--	--	--	--	--
Black spruce	--	--	--	--	--	--	--
Balsam fir	582	40	--	--	--	--	--
Hemlock	--	--	--	--	--	--	--
Tamarack	--	--	--	--	--	--	--
Northern white-cedar	111	8	--	--	100	1	--
Other softwoods	--	--	--	--	--	--	--
<b>Total</b>	<b>9,712</b>	<b>674</b>	<b>412</b>	<b>424</b>	<b>100</b>	<b>1</b>	<b>--</b>
<b>Hardwoods</b>							
White oak	57,983	4,058	77	75	150	1	5
Select red oak	129,366	9,053	5	6	127	1	--
Other red oak	74,231	5,195	3	3	73	4/	--
Hickory	2,137	148	--	--	--	--	--
Basswood	475	33	--	--	--	--	--
Beech	--	--	--	--	--	--	--
Yellow birch	7,085	494	--	--	--	--	--
Hard maple	25,960	1,813	--	--	--	--	--
Soft maple	24,523	1,716	--	--	--	--	8
Elm	78,460	5,488	--	--	--	--	--
Ash	23,485	1,644	--	--	--	--	--
Cottonwood	--	--	--	--	--	--	--
Balsam poplar	--	--	--	--	--	--	--
Bigtooth aspen	10,122	708	1	1	--	--	17
Quaking aspen	25,901	1,811	4	4	--	--	44
Paper birch	18,553	1,300	--	--	--	--	3
Black walnut	--	--	--	--	--	--	--
Other hardwoods <sup>5/</sup>	5,280	368	42	42	--	--	4
<b>Total</b>	<b>483,561</b>	<b>33,829</b>	<b>132</b>	<b>131</b>	<b>350</b>	<b>2</b>	<b>81</b>
<b>All species</b>	<b>493,273</b>	<b>34,503</b>	<b>544</b>	<b>555</b>	<b>450</b>	<b>3</b>	<b>81</b>

<sup>2/</sup>128 cubic feet; includes wood, bark, and air space.<sup>4/</sup>Less than 500 cubic feet.<sup>5/</sup>Includes butternut and black cherry.

Table 63.--Volume of primary plant residue by use and type of residue, Central Unit, Wisconsin, 1981

(In thousand cubic feet)

Use	Wood residue							
	Total		Coarse <sup>1/</sup>		Fine <sup>2/</sup>		Bark <sup>3/</sup>	
	Softwoods	Hardwoods	Softwoods	Hardwoods	Softwoods	Hardwoods	Softwoods	Hardwoods
Fiber products <sup>4/</sup>	312.3	2,755.4	277.0	2,408.0	35.3	347.4	--	--
Charcoal	0.9	20.7	--	--	0.9	20.7	--	--
Industrial fuel	99.7	999.9	70.4	317.4	29.3	682.5	114.1	1,482.3
Domestic fuel	307.7	1,677.0	306.4	1,589.0	1.3	88.0	144.2	646.5
Miscellaneous <sup>5/</sup>	408.2	1,794.1	72.7	255.4	335.5	1,538.7	175.7	789.8
Not used <sup>6/</sup>	31.8	241.6	6.7	92.2	25.1	149.4	32.4	164.5
<b>Total</b>	<b>1,160.6</b>	<b>7,488.7</b>	<b>733.2</b>	<b>4,662.0</b>	<b>427.4</b>	<b>2,826.7</b>	<b>466.4</b>	<b>3,083.1</b>

<sup>1/</sup>Suitable for chipping such as slabs, edgings, veneer cores, etc.<sup>2/</sup>Not suitable for chipping such as sawdust, veneer clippings, etc.<sup>3/</sup>Does not include bark disposal at pulpmills.<sup>4/</sup>For manufacture of pulp, hardboard, or roofing felt.<sup>5/</sup>Livestock bedding, mulch, small dimension, and specialty items.<sup>6/</sup>Includes residue burned as waste.

Table 64.--All live tree biomass on commercial forest land by species group and forest type, Central Unit, Wisconsin, 1983  
(In green tons)

Species group	All types	Forest type						Northern white-cedar
		Jack pine	Red pine	White pine	Balsam fir	White spruce	Black spruce	
Softwoods								
Jack pine	11,587,009	6,963,726	376,580	262,262	--	--	--	--
Red pine	10,432,071	322,312	9,016,751	451,886	20,359	--	--	--
White pine	7,361,201	124,844	326,824	3,064,760	63,216	--	75,736	22,613
White spruce	196,230	--	12,158	37,585	--	122,541	--	--
Black spruce	329,812	--	10,019	--	--	--	209,650	12,557
Balsam fir	1,215,088	--	--	21,155	243,728	--	--	225,660
Hemlock	1,543,854	--	--	--	--	--	--	62,126
Tamarack	1,419,348	1,183	--	23,598	--	--	42,230	71,736
Eastern redcedar	33,574	5,648	--	--	--	--	--	--
Northern white-cedar	1,546,090	--	--	--	4,128	--	--	1,099,374
Other softwoods	239,930	--	137,446	--	--	--	--	--
Total	35,904,207	7,417,713	9,879,778	3,861,246	331,431	122,541	327,616	1,494,066
Hardwoods								
White oak	14,327,755	64,094	36,168	282,097	--	--	--	--
Select red oak	23,248,146	193,116	53,905	43,797	9,727	--	--	16,848
Other red oak	31,819,564	1,273,203	361,561	779,246	--	--	--	8,303
Select hickory	545,926	--	--	19,459	--	--	--	--
Other hickory	912,687	--	--	--	--	--	--	--
Basswood	3,978,186	--	8,626	10,172	6,836	--	--	12,432
Beech	84,687	--	19,716	--	--	--	--	--
Yellow birch	2,337,073	--	--	37,619	17,197	--	--	34,378
Hard maple	8,456,590	--	40,853	89,978	--	--	--	--
Soft maple	21,110,648	45,689	22,381	286,319	29,775	--	--	52,365
Elm	3,389,723	11,961	--	--	9,739	--	--	15,792
Black ash	3,956,089	--	--	55,747	42,977	--	--	96,413
White & green ash	2,375,461	--	18,668	21,439	--	--	--	--
Cottonwood	159,120	15,892	--	--	--	--	--	--
Willow	182,269	--	--	--	--	--	--	--
Hackberry	539	--	--	--	--	--	--	--
Balsam poplar	--	--	--	117,341	--	--	--	--
Birch	7,340,377	36,942	8,567	--	--	--	--	46,119
Bigtooth aspen	18,761,152	412,308	68,395	495,053	--	--	--	125,691
Quaking aspen	8,924,944	60,952	22,150	163,884	33,633	--	37,073	--
Paper birch	234,260	--	--	--	--	--	--	--
River birch	2,269,467	2,686	3,574	95,790	3,956	--	--	--
Black cherry	34,566	--	--	--	--	--	--	--
Black walnut	364,144	--	--	--	--	--	--	--
Butternut	455,199	14,333	--	--	--	--	--	--
Other hardwoods	1,539,196	1,384	2,322	21,657	--	--	--	--
Noncommercial species	1,539,196	2,132,560	656,886	2,519,598	153,840	--	37,073	408,341
Total	156,807,768	9,550,273	10,536,664	6,380,844	485,271	122,541	364,689	1,902,407
All species	192,711,975							

(Table 64 continued on next page)

(Table 64 continued)

Species group	Tamarack	Oak-hickory	Elm-ash-soft maple	Forest type			Paper birch	Exotics	Nonstocked
				Maple-birch	Aspen	Paper birch			
<b>Softwoods</b>									
Jack pine	--	2,615,569	51,498	308,259	910,627	87,542	--	--	10,946
Red pine	--	260,184	14,647	137,650	109,877	82,468	15,937	--	--
White pine	30,777	1,270,574	440,334	1,429,243	322,733	178,406	--	--	11,141
White spruce	--	--	6,387	13,921	--	--	3,638	--	--
Black spruce	10,036	--	11,689	11,623	64,238	--	--	--	--
Balsam fir	--	83,802	185,644	338,974	67,606	48,519	--	--	--
Hemlock	--	6,968	177,410	1,267,803	18,970	10,577	--	--	--
Tamarack	954,376	1,496	203,529	5,238	28,158	70,713	--	--	17,091
Eastern redcedar	--	25,949	--	--	1,977	--	--	--	--
Northern white-cedar	7,307	6,488	240,299	138,748	--	49,746	--	--	--
Other softwoods	--	30,407	--	--	--	--	72,077	--	--
<b>Total</b>	<b>1,002,496</b>	<b>4,301,437</b>	<b>1,331,437</b>	<b>3,651,459</b>	<b>1,524,186</b>	<b>527,971</b>	<b>91,652</b>	<b>39,178</b>	
<b>Hardwoods</b>									
White oak	--	10,659,300	639,863	1,309,472	861,695	395,859	--	--	179,217
Select red oak	--	16,711,361	601,584	3,363,449	1,798,938	386,869	--	--	8,552
Other red oak	--	25,397,222	405,312	961,253	2,116,174	110,483	--	--	416,807
Select hickory	--	398,440	15,231	10,262	5,543	88,546	--	--	8,445
Other hickory	--	339,377	--	526,275	47,035	--	--	--	--
Basswood	--	401,512	571,518	2,631,765	195,965	32,596	--	--	106,764
Beech	--	--	--	64,971	--	--	--	--	--
Yellow birch	4,938	67,981	417,873	1,699,152	29,054	28,881	--	--	--
Hard maple	--	806,112	63,469	7,125,946	194,502	135,730	--	--	--
Soft maple	55,228	3,753,143	5,806,100	6,641,548	3,965,620	426,908	--	--	25,572
Elm	29,949	353,352	901,551	1,593,619	265,970	128,207	--	--	79,583
Black ash	17,885	179,562	2,584,485	4,499,360	326,801	120,979	--	--	31,880
White & green ash	--	338,122	578,837	1,249,076	116,039	53,280	--	--	--
Cottonwood	--	89,859	18,931	12,200	11,108	11,130	--	--	--
Willow	--	--	90,164	21,159	61,005	9,941	--	--	--
Hackberry	--	--	--	539	--	--	--	--	--
Balsam poplar	--	--	--	--	--	--	--	--	--
Bigtooth aspen	22,575	2,446,946	7,575	863,844	3,641,272	195,315	--	--	--
Quaking aspen	34,596	1,801,631	827,123	1,887,323	12,428,725	664,837	--	--	95,042
Paper birch	23,873	1,664,340	583,163	1,253,082	2,315,386	2,623,293	--	--	18,424
River birch	--	40,082	194,178	--	--	--	--	--	--
Black cherry	--	911,285	274,574	490,079	370,356	52,740	--	--	4,427
Black walnut	--	23,681	--	10,885	--	--	--	--	--
Butternut	--	163,112	--	169,996	14,007	15,536	--	--	11,493
Other hardwoods	--	72,985	307,680	40,175	20,026	--	--	--	--
Noncommercial species	--	324,517	117,172	755,560	275,198	41,386	--	--	--
<b>Total</b>	<b>189,044</b>	<b>67,063,922</b>	<b>14,906,373</b>	<b>33,170,990</b>	<b>29,060,419</b>	<b>5,522,516</b>	<b>--</b>	<b>986,206</b>	
<b>All species</b>	<b>1,191,540</b>	<b>71,355,359</b>	<b>16,237,810</b>	<b>36,822,449</b>	<b>30,581,605</b>	<b>6,050,487</b>	<b>91,652</b>	<b>1,025,384</b>	

Table 65.--All live tree biomass by species group and tree biomass component, Central Unit, Wisconsin, 1983

(In green tons)

Species group	All components	Biomass component				Cull Tops and limbs	
		All live 1- to 5-inch trees	Growing stock		Boles		
			Boles	Tops and limbs			
Softwoods							
Jack pine	11,587,009	1,982,679	6,081,618	2,590,866	672,134	259,712	
Red pine	10,432,071	1,273,115	6,304,958	2,711,601	104,116	38,281	
White pine	7,361,201	737,781	4,184,850	1,796,349	450,001	192,220	
White spruce	196,230	167,568	20,310	8,352	--	--	
Black spruce	329,812	212,764	82,811	34,237	--	--	
Balsam fir	1,215,088	489,853	472,136	193,610	41,814	17,675	
Hemlock	1,543,854	50,486	904,213	379,748	147,061	62,346	
Tamarack	1,419,348	323,892	738,559	310,526	32,613	13,758	
Eastern redcedar	33,574	13,702	7,660	3,152	6,409	2,651	
Northern white-cedar	1,546,090	586,164	591,444	240,062	93,895	34,525	
Other softwoods	239,930	81,521	74,595	30,919	41,404	11,491	
Total	35,904,207	5,919,525	19,463,154	8,299,422	1,589,447	632,659	
Hardwoods							
White oak	14,327,755	997,625	6,610,259	2,742,134	2,872,288	1,105,449	
Select red oak	23,248,146	412,988	13,333,723	5,666,592	2,695,845	1,138,998	
Other red oak	31,819,564	1,627,874	13,106,278	5,490,472	8,234,946	3,359,994	
Select hickory	545,926	72,849	215,953	91,659	121,884	43,581	
Other hickory	912,687	148,283	482,205	204,629	54,454	23,116	
Basswood	3,978,186	307,728	2,206,065	937,968	375,397	151,028	
Beech	84,687	--	36,015	15,288	23,401	9,983	
Yellow birch	2,337,073	235,283	936,054	390,388	550,591	224,757	
Hard maple	8,456,590	679,544	4,170,069	1,773,228	1,304,202	529,547	
Soft maple	21,110,648	3,880,047	9,504,424	4,046,447	2,682,790	996,940	
Elm	3,389,723	566,977	1,561,423	644,361	457,122	159,840	
Black ash	3,956,089	584,061	2,085,964	872,854	317,076	96,134	
White & green ash	2,375,461	226,736	1,228,914	523,093	278,135	118,583	
Cottonwood	159,120	--	80,745	34,271	30,979	13,125	
Willow	182,269	8,428	105,454	44,537	16,708	7,142	
Hackberry	539	539	--	--	--	--	
Balsam poplar	--	--	--	--	--	--	
Bigtooth aspen	7,340,377	643,172	4,356,953	1,890,685	314,545	135,022	
Quaking aspen	18,761,152	2,731,446	9,925,964	4,263,834	1,358,506	481,402	
Paper birch	8,924,944	1,997,665	3,995,727	1,699,051	908,863	323,638	
River birch	234,260	28,450	84,966	36,193	59,423	25,228	
Black cherry	2,269,467	549,401	573,084	243,994	714,376	188,612	
Black walnut	34,566	--	7,642	3,243	16,580	7,101	
Butternut	364,144	1,215	168,244	71,889	86,121	36,675	
Other hardwoods	455,199	85,870	127,447	53,257	139,082	49,543	
Noncommercial species	1,539,196	--	--	--	1,422,406	116,790	
Total	156,807,768	15,786,181	74,903,572	31,740,067	25,035,720	9,342,228	
All species	192,711,975	21,705,706	94,366,726	40,039,489	26,625,167	9,974,887	

Table 66.--Sampling errors<sup>1/</sup> for estimates smaller than the Unit totals of volume, net growth, removals, and area of commercial forest land, Central Unit, Wisconsin, 1983

Sampling error	Commercial forest land	Growing stock			Sawtimber		
		Inventory	Growth	Removals	Inventory	Growth	Removals
Percent	Thousand acres	- - - - Thousand cubic feet - - - -			- - - - Thousand board feet - - - -		
1	359.6	20,324,205	1,383,661	21,410,144	92,215,433	6,530,537	72,628,928
2	89.9	5,081,051	345,915	5,352,536	23,053,858	1,632,634	18,157,232
3	40.0	2,258,245	153,740	2,378,905	10,246,159	725,615	8,069,881
4	22.5	1,270,263	86,479	1,338,134	5,763,465	408,159	4,539,308
5	14.4	812,968	55,346	856,406	3,688,617	261,221	2,905,157
10	3.6	203,242	13,837	214,101	922,154	65,305	726,289
15	1.6	90,330	6,150	95,156	409,846	29,025	322,795
20	0.9	50,811	3,459	53,525	230,539	16,326	181,572
25	0.6	32,519	2,214	34,256	147,545	10,449	116,206
50	0.1	8,130	553	8,564	36,886	2,612	29,052
100	0.0	2,032	138	2,141	9,222	653	7,263

<sup>1/</sup>At the 68-percent probability level.

<sup>2/</sup>International 1/4-inch rule.

Table 67.--Sampling errors for county totals of growing-stock volume, net growth, removals, and area of commercial forest land, Central Unit, Wisconsin, 1983

(Percent of estimate)

County	Commercial forest land	Growing stock		
		Inventory	Growth	Removals
Adams	1.24	11.30	13.79	103.62
Chippewa	1.26	9.80	14.15	75.33
Clark	1.07	8.09	11.09	71.66
Eau Claire	1.53	11.19	15.22	133.33
Jackson	0.98	7.86	10.50	142.12
Juneau	1.19	9.77	13.02	140.46
Marathon	1.00	7.29	10.33	49.92
Marquette	1.95	17.93	23.53	165.14
Monroe	1.21	10.39	15.42	151.34
Portage	1.44	11.12	14.77	123.44
Waupaca	1.44	9.17	14.15	101.28
Waushara	1.57	11.66	15.39	348.21
Wood	1.32	10.69	14.00	82.05
All counties	0.35	2.72	3.73	26.52













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Timber resource of Wisconsin's Central Survey Unit, 1983. Resour. Bull. NC-84. St. Paul, MN: U.S. Department of Agriculture, Forest Service, North Central Forest Experiment Station; 1985. 88 p.

The timber resource of the Central Wisconsin Survey Unit increased 4.2 percent in commercial forest area and increased 75 percent in growing-stock volume between 1968 and 1983. Highlights and statistics from the fourth inventory of this unit are presented for area, volume, growth, mortality, removals, utilization, and biomass.

KEY WORDS: Statistics, area, volume, growth, mortality, removals.

